WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #2

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OFFICE OF WEST VIRGINIA SECRETARY OF STATE

NOTICE OF A COMMENT PERIOD ON A PROPOSED RULE

AGENCY: DCL&ER, Division of Environmental Protection TITLE NUMBER: 47

RULE TYPE: Legislative ; CITE AUTHORITY § 20-5D-4

AMENDMENT TO AN EXISTING RULE: YES X NO ____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 34

TITLE OF RULE BEING AMENDED: Dam Safety Regulations

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: _____

TITLE OF RULE BEING PROPOSED: _____

IN LIEU OF A PUBLIC HEARING, A COMMENT PERIOD HAS BEEN ESTABLISHED DURING WHICH ANY INTERESTED PERSON MAY SEND COMMENTS CONCERNING THESE PROPOSED RULES. THIS COMMENT PERIOD WILL END ON August 7, 1993 AT 12:00 midnite

ONLY WRITTEN COMMENTS WILL BE ACCEPTED AND ARE TO BE MAILED TO THE FOLLOWING ADDRESS Brian Long, Division of Environmental Protection, Office of Water Resources, 1201 Greenbrier Street, Charleston, WV 25311.

THE ISSUES TO BE HEARD SHALL BE LIMITED TO THE PROPOSED RULE.

David C. Callaghan, Director
Division of Environmental Protection

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

14.90

DEPARTMENT OF COMMERCE, LABOR & ENVIRONMENTAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
1201 Greenbrier Street
Charleston, WV 25311-1088

Gaston Caperton
Governor
John M. Ranson
Cabinet Secretary

David C. Callaghan
Director
Ann A. Spaher
Deputy Director

Memorandum

To: John M. Ranson, Secretary
Department of Commerce, Labor
and Environmental Resources

From: David C. Callaghan, Director
Division of Environmental Protection

Date: June 30, 1993

Subject: Division Approval of Proposed Rule and Request for Department Consent to File.

==========

The proposed rule, Dam Safety Regulations, 47 C.S.R. 34 has my approval to be proposed pursuant to the West Virginia Administrative Procedures Act. Your approval is requested.

David C. Callaghan, Director
Division of Environmental Protection

DEPARTMENT OF COMMERCE, LABOR & ENVIRONMENTAL RESOURCES
OFFICE OF THE SECRETARY
State Capitol, Room M-146
Charleston, West Virginia 25305-0310
Telephone: (304) 558-0400
Fax No.: (304) 558-4983

GASTON CAPERTON
Governor

JOHN M. RANSON
Cabinet Secretary

July 7, 1993

David C. Callaghan, Director
Division of Environmental Protection
10 McJunkin Road
Nitro, West Virginia 25143-2506

Re: Proposed Rule - Title 47, Series 34 - Dam Safety Regulations (Amendments)

Dear Director Callaghan:

Pursuant to West Virginia Code Section 5F-2-2(a)(12), I hereby consent to the proposal of the rule specified above.

You may attach a copy of this letter to your filing with the Secretary of State as evidence of my consent.

Sincerely yours,

John M. Ranson
Cabinet Secretary

JMR:ro

cc: Brian Long

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OFFICE OF WEST VIRGINIA SECRETARY OF STATE

FISCAL NOTE FOR PROPOSED RULE

Rule Title: Dam Safety Regulations, 47 C.S.R. 34

Type of Rule: _X_ Legislative ___ Interpretive ___ Procedural

Agency: Division of Environmental Protection

Address: Office of Water Resources, 1201 Greenbrier Street, Charleston, West Virginia 25311

1. Effect of Proposed Rule	ANNUAL Increase	ANNUAL Decrease	FISCAL YEAR Current	FISCAL YEAR Next	FISCAL YEAR Thereafter
Estimated Total Cost	$7,800		177,178	184,987	184,987
Personal Services	$0		159,122	159,122	159,122
Current Expenses	$7,000		27,056	34,056	34,056
Repairs & Alterations	$400		1,000	1,400	1,400
Equipment	$200		0	200	200
Other	$200		0	200	200

2. Explanation of above estimates: The proposed amendment to the Dam Safety Regulations does not change the program's operating cost, but provides for a modest increase in program application and annual fees.

3. Objectives of this rule: The rule establishes the provisions necessary to assure protection of public safety relative to dams. The proposed amendment provides for a modest increase in certificate application fees, establishment of an annual registration fee, and exempts soil conservation district dams designed and constructed by the U.S. Soil Conservation Service from all fees.

4. Explanation of Overall Economic Impact of Proposed Rule.

   A. Economic Impact on State Government. Modest increase to Special Revenue.

   B. Economic Impact on Political Subdivisions; Specific Industries; Specific groups of citizens. Dam owners holding certificates of approval will be modestly impacted by a new registration fee. Persons required to apply for construction, modification or removal of a dam will experience an increased application fee.

   C. Economic Impact on Citizens/ Public at Large. None.

Date:

Signature of Agency Head or Authorized Representative

Director, Division of Environmental Protection

FISCAL NOTE FOR PROPOSED 47 C.S.R.34 (CONT.)

Explanation of Dam Safety Regulations Proposed Fees:

Application Fees - (Non-Coal Dams)

Prior to the 1992 amendments to the Act, the only fees authorized were paid by the dam owner and consisted of "reasonable" application filing fees which could not exceed $25. Considering the expense of performing a technical engineering evaluation of the plans and specifications for construction of a dam, each applicant was charged the full $25. The rate of applications per year has increased from an average of four to over thirteen from 1988 to the present. Using an average of ten applications per year at the previous authorized rate, revenue has averaged $250 per year.

The 1992 amendments authorize reasonable application fees not to exceed $300 paid by the dam owner. The amendments exclude SCS dams (approximately three applications per year or 30 percent of the total). Using the highest fee rate in the proposed regulations of $300, times the average of ten applications per year (excluding SCS), the estimated revenue per year should be $3,000. This represents an increase in annual revenue of $2750 for applications. In actuality, the proposed regulations assess reduced application fees for less complicated applications such as the breach, abandonment or removal of dams which should reduce the $3,000 estimated total slightly.

Annual Registration Fees - (Non-Coal Dams)

The proposed regulations assess dam owners holding certificates of approval in accordance with the hazard classification of the dam at the rate of $50 for Class A, $75 for Class B and $100 for Class C.
Using a total of 304 inventoried dams which are currently within the jurisdiction of the Act, with all dams under certificates of approval, and cheerful payment by the owners, would result in an estimated total income of $30,000 per year using the above hazard classification assessments. The estimated $30,000 per year is reduced, however, due to the following factors:

The total inventory of 304 dams is reduced to 150 as a result of the exclusion of SCS dams. The annual maximum revenue is thereby reduced by 57 percent to an estimated $13,000.

The Act amendments specify that only dams with Certificates of Approval may be assessed. Only 48 of the 150 remaining dams are under Certificates of Approval, essentially 102 dams have so far been able to successfully ignore the Act's requirements, thereby reducing the estimated annual maximum revenue another 63 percent to $4800.

Total Annual Revenue - (Non-Coal Dams)

The total of approximately $3000 in application fees and $4800 in registration fees results in about $7800 to be paid by dam owners statewide towards the dam safety programs operating cost, the remainder of the programs operating cost is covered by general revenue. The total represents an estimated increase of $7550 in revenue per year. The total does not include indeterminate assessments from possible civil administrative penalties, provisions which are being added with this amendment.

PREAMBLE TO A PROPOSED RULE
CONCERNING
DAM SAFETY REGULATIONS

AGENCY: Department of Commerce, Labor, and Environmental Resources; Division of Environmental Protection.

REGULATION: Title 47, Series 34, "Dam Safety Regulations."

ACTION: Filing of a Proposed Rule, and Notice of a Public Comment Period.

SUMMARY: The proposed amendment to the Dam Safety Regulations brings the rule into conformance with legislation passed during the 1992 Legislative session. The amendment provides for a modest increase in certificate application fees, establishment of an annual registration fee, exempts soil conservation district dams designed and constructed by the U.S. Soil Conservation Service from all fees and adds civil administrative penalty provisions.

Written comments with postmarks prior to August 8, 1993 will be accepted. Written comments should be sent to:

Brian Long
Division of Environmental Protection
Office of Water Resources
1201 Greenbrier Street
Charleston, West Virginia 25311

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CONCERNING
DAM SAFETY REGULATIONS

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DIVISION OF ~~NATURAL RESOURCES~~ ENVIRONMENTAL PROTECTION
DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES

SERIES 34
DAM SAFETY REGULATIONS

§ 47-34-1. General.

1.1. Scope and Purpose. -- This legislative rule establishes requirements relating to the design, placement, construction, enlargement, alteration, removal, abandonment, and repair of dams in this State that fall within the definition set forth in Section 2.6 of these regulations. The scope of these regulations does not extend to those dams provided for in §22-1-16.

1.2. Authority. -- W. Va. Code § 20-5D-4.

1.3. Filing Date. -- _____.

1.4. Effective Date. -- _____.

~~1.5. Repeal of Former Rule. -- This legislative rule repeals and replaces 47 C.S.R. 32 "Dam Control" that was filed on December 30, 1982 and became effective on January 1, 1983.~~

1.5. Amendment of Existing Rule. - This legislative rule amends the Dam Safety Regulations, 47 C.S.R. 34, filed April 5, 1991 and made effective April 22, 1991.

§ 47-34-2. Definitions.

2.1. "Abandonment" means to render a dam non-impounding by filling the reservoir created by that dam with solid materials and by diverting the natural drainway around the site.

2.2. "Act" means the West Virginia Dam Control and Safety Act, W. Va. Code § 20-5D-1, et seq.

2.3.~~2.2~~. "Appurtenances" means any ancillary part of a dam or reservoir

system which contributes to the operation or construction of the dam.

2.4. "Assessment Officer" means a person appointed by the director to carry out the review and hearing procedures outlined in these regulations.

2.5.~~2.3.~~ "Bridge" means a structure, including any abutments or supports appurtenant to that structure, which:

2.5.1.~~2.3.1.~~ Meets the definition of "dam" set forth in Section 2.6 of these regulations;

2.5.2.~~2.3.2.~~ Is constructed across a natural drainway for the purpose of maintaining a pathway, railway, roadway, support structure, or other passageway for transporting persons, traffic, or other static or moving loads; and

2.5.3.~~2.3.3.~~ Has an opening under the structure to provide for the passage of normal stream flow.

2.6.~~2.4.~~ "Certificate of Approval" means the approval in writing issued by the director to a person who has applied for certification authorizing such person to place, construct, enlarge, alter, remove, abandon, or repair a dam and which specifies the conditions or limitations under which such work is to be performed by the applicant.

2.7.~~2.5.~~ "Channel Protection" means any measure taken to prevent or control erosion, cavitation, or other destructive processes in channels such as diversion ditches and spillways.

2.8.~~2.6.~~ "Dam" means an artificial barrier or obstruction --including any works appurtenant to it and any reservoir created by it -- which is or will be placed, constructed, enlarged, altered, or repaired so that it does or will impound or divert water and is or will be twenty-five (25) feet or more in height from the natural bed of a stream or watercourse measured at the downstream toe of the barrier and which does or can impound fifteen (15) acre-feet or more of water or is or will be six (6) feet or more in height from the natural bed of such stream or watercourse measured at the downstream toe of the barrier and which does or can impound fifty (50) acre-feet or more of water. The term "dam" does not include:

2.8.1.~~2.6.1.~~ Any dam owned by the federal government;

2.8.2.~~2.6.2.~~ Any dam for which the operation and maintenance thereof is the responsibility of the federal government;

2.8.3.~~2.6.3.~~ Any slack water dam constructed and maintained in connection with public highways, streets, bridges, culverts, or viaducts;

2.8.4.~~2.6.4.~~ Any farm pond constructed and used primarily for agricultural purposes -- including, but not limited, to livestock watering, irrigation, retention of animal wastes, and fish culture -- which has no potential to cause a loss of human life in the event of embankment failure; ~~and~~ or

~~2.6.5. Any dam under the jurisdiction of the West Virginia Division of Energy pursuant to W. Va. Code § 22-1-16;~~

2.8.5. Structures which do not or will not impound water under normal conditions and which have a designed culvert or similar conveyance or such capacity as would be used under a highway at the same location: Provided, however, That the director may apply the provisions of W Va Code § 20-5D-10 for hazardous, non-impounding structures which are brought to his or her attention.

2.9.~~2.7.~~ "Dam Safety Office" means the Dam Safety Office of the Division of ~~Natural Resources~~ Environmental Protection of the West Virginia Department of Commerce, Labor and Environmental Resources.

2.10.~~2.8.~~ "Dangerous Condition" means any structural or hydraulic condition of a dam or its appurtenances which may lead to:

2.10.1.~~2.8.1.~~ Failure of the dam and possible loss of human life or substantial loss of property;

2.10.2.~~2.8.2.~~ Harm to the public health or welfare; or

2.10.3.~~2.8.3.~~ Significant harm to the environment.

2.11.~~2.9.~~ "Design Storm" means predicted precipitation of given intensity, frequency, and duration based upon National Weather Service data that is required to be considered in the design of a dam.

2.12.~~2.10.~~ "Director" means the director of the Division of ~~Natural Resources~~ Environmental Protection of the West Virginia Department of Commerce, Labor and Environmental Resources or his authorized representative.

2.13.~~2.11.~~ "Diversion Ditch" means a designed channel constructed for the purpose of collecting and transmitting surface runoff resulting from a given design storm.

2.14.~~2.12.~~ "Embankment" means a constructed deposit of earth or waste materials, usually exhibiting at least one sloping face.

2.15.~~2.13.~~ "Emergency Condition" means an imminently dangerous condition where failure of the dam is possible at any time.

2.16.~~2.14.~~ "Emergency Spillway" means a hydraulic structure designed to discharge water in excess of that which an impoundment is designed to store or which cannot be passed through a principal spillway.

2.17. "Enforcement Action" means a written notification provided to an alleged violator by the director within fifteen (15) calendar days of an inspection, or in accordance with the provisions of the Act.

2.18.~~2.15.~~ "Engineer" or "Registered Professional Engineer" means a person who by reason of his knowledge of mathematics, the physical sciences, and the principles of engineering, acquired by professional education and practical experience, is qualified to engage in the practice of professional engineering and holds a current certificate of registration issued by the State granting its licensee the privilege of practicing professional engineering in accordance with the provisions of W. Va. Code § 30-13.

2.19.~~2.16.~~ "Freeboard" means the vertical distance between the lowest point of the crest of the embankment of a dam and the reservoir water surface.

2.20.~~2.17.~~ "Geotechnical Engineering" means the application of soil mechanics, rock mechanics, and geology to the solution of problems involving engineering structures and their interaction with surrounding earth materials.

2.21.~~2.18.~~ "Hazard Classification" means a classification rating assigned to a structure based upon engineering evaluations and judgments for predicting the danger to human life, property, and environment should a failure of the structure occur.

2.22.~~2.19.~~ "Hydraulics" means the study of the physical behavior of liquids, especially water, in natural or man-made systems or processes.

2.23.~~2.20.~~ "Hydrologic Analysis" means a determination, using accepted engineering methods, to establish surface water runoff for a given design storm.

2.24.~~2.21.~~ "Hydrology" means the science that deals with the occurrence and behavior of water in the atmosphere, on the ground, and underground.

2.25.~~2.22.~~ "Impoundment" means a basin for the retention of water, sediment, or waste.

2.26.~~2.23.~~ "Incised Reservoir" means an impoundment, or that portion of an impoundment, which has been excavated below the natural stream level into natural ground.

2.27.~~2.24.~~ "Natural Bed" means the lowest elevation of a stream, intermittent stream, or channel created by nature which has not been altered or changed by the actions of man.

2.28.~~2.25.~~ "Natural Drainway" means any natural watercourse which may carry water to the tributaries and rivers of the watershed.

2.29. "Notice of Civil Administrative Penalty" means a written notification provided to a violator by the director, by means of certified mail or personal service, assessing a civil administrative penalty. A notice of civil administrative penalty shall include:

2.29.1. A reference to the section of the statute, rule, regulation, order, or certificate of approval term allegedly violated;

2.29.2. A concise statement of the facts alleged to constitute the violation;

2.29.3. A statement of the amount of the initial civil administrative penalty to be imposed; and

2.29.4. A statement of the alleged violator's right to an informal hearing.

2.30. "Notice of Dismissal" means a written notification provided to a violator by the assessment officer or the director dismissing and vacating the civil administrative penalty. A notice of dismissal may be issued at any time during the proceedings.

2.31.~~2.26.~~ "P100" means the rainfall amount based upon a one hundred (100) year frequency, six (6) hour duration rainfall event (i.e, a 100-year, 6-hour storm).

2.32. ~~2.27.~~ "Person" means any public or private corporation, institution, association, society, firm, organization or company organized or existing under the laws of this or any other state or country; the State of West Virginia; any state governmental

agency; any political subdivision of the State or of its counties or municipalities; sanitary district; public service district; drainage district; soil conservation district; watershed improvement district; partnership; trust; estate; person or individual; group of persons or individuals acting individually or as a group; or any other legal entity whatever. The term "person", when used in these regulations, shall be understood to include and refer to any authorized agent, lessee or trustee of any of the foregoing or receiver or trustee appointed by any court for any of the foregoing.

2.33.~~2.28.~~ "Piping" means progressive internal erosion of earth material or adjacent unaltered material caused by water movement through embankment material with sufficient force to move soil particles, leading to the development of a channel or a hole.

2.34.~~2.29.~~ "Primary Highway" means those roadways which are designated as interstate routes, United States numbered routes, or West Virginia numbered routes.

2.35.~~2.30.~~ "Principal Spillway" means the hydraulic structure designed to discharge water stored between the normal pool and the emergency spillway invert elevations.

2.36.~~2.31.~~ "Probable Maximum Precipitation" or "PMP" means the depth-duration-area rainfall event for a particular area that represents the maximization of the most critical meteorological conditions that are considered possible to occur.

2.37.~~2.32.~~ "Project Area" means all areas physically affected by the construction of a dam including, but not limited to, the dam and its appurtenances, the reservoir area, construction zones, permanent or temporary access roads, borrow areas, materials storage areas, staging areas, and waste disposal areas.

2.38.~~2.33.~~ "Roadfill" means a barrier or obstruction which:

2.38.1.~~2.33.1.~~ Meets the definition of "dam" set forth in Section 2.6 of these regulations;

2.38.2.~~2.33.2.~~ Is constructed across a natural drainway for the purpose of maintaining a roadway or similar crossing across that drainway; and

2.38.3.~~2.33.3.~~ Has a culvert located in the drainway that is of sufficient size to prevent the normal impoundment of water.

2.39.~~2.34.~~ "Safety Factor" or "Factor of Safety" means the ratio of the sum of the forces or moments resisting mass movement to the sum of the forces or moments

tending to produce mass movement.

2.40.~~2.35.~~ "Secondary Highway" means those roadways which are designated by the West Virginia Division of Highways as county numbered routes.

2.41.~~2.36.~~ "Sediment" means solid material, either mineral or organic, resulting from the works of man that has been moved from its site of origin by water.

2.42.~~2.37.~~ "Serious Problem" means a situation which left uncorrected may lead to a dangerous condition.

2.43.~~2.38.~~ "Significant Harm to the Environment" means the degradation of a public or private surface water supply, the alteration of habitat that adversely affects wildlife, or the reduction of the productivity of agricultural land.

2.44.~~2.39.~~ "Site" means the permanent location of a dam, including the dam and its appurtenances, the reservoir area, diversion ditches, and sediment control facilities.

2.45.~~2.40.~~ "Subsidence" means a sinking, collapsing, or cracking of a portion of the earth's surface resulting from the presence of a void or voids beneath the surface.

2.46. "Violator" means the person who is alleged to have violated the Act, or any rule, regulation, notice to comply, order, or certificate of approval term imposed pursuant to the Act.

2.47. "Written Decision" means a written decision furnished to the violator concerning the director's final decision regarding the assessment of a civil administrative penalty and the reasons therefor.

§ 47-34-3. Classification of Dams.

3.1. Types of Dams.

3.1.1. For the purpose of these regulations, dams are divided into three general types:

3.1.1.a. Embankment Dams - Embankment dams are usually constructed of materials which exhibit rock-like or soil-like properties.

3.1.1.b. Gravity Dams - Gravity dams are usually constructed of concrete or masonry materials which form a rigid body.

3.1.1.c. Waste Disposal Dams - Waste disposal dams are usually constructed of waste materials such as fly ash or coal refuse. The reservoir is utilized to dispose of waste material, thereby creating a continuously decreasing freeboard condition.

3.1.2. In cases where a dam exhibits properties of more than one type, such as gabion structures or roller-compacted concrete, design techniques must be applied which are reasonably applicable to the particular structure involved.

3.2. Dam-Related Measurements.

3.2.1. Measuring Dam Height - The height of a dam is measured from the crest or uppermost point on the dam to the lowest point in the natural bed of the stream or watercourse at the downstream toe of the dam. Gravity overflow dams must be measured to the highest level which is greater than ten percent (10%) of the total crest length of the dam. The height of dams with sloping crests shall be determined by a weighted-average height above the natural bed of the stream or watercourse, excluding spillways.

3.2.2. Measuring Reservoir Volume - For purposes of determining whether a dam meets the criteria set forth in Section 2.6 of these regulations as applied to reservoir volume calculations, the volume must be calculated at the crest elevation of the dam that is equivalent to the elevation used in determining the dam height.

3.2.3. Incised Reservoirs - The height of the embankment of an incised reservoir must be measured using the method set forth in Section 3.2.1 of these regulations. Reservoir volume must be calculated from the crest of the embankment to the elevation of the lowest point in the natural bed of the stream or watercourse at the downstream toe. That portion of the water stored below stream grade shall not be included in determining whether a dam meets the criteria set forth in Section 2.6 of these regulations; however, it must be reported in the application as part of the total reservoir volume.

3.3. Dams in Series - If the director determines that a series or combination of water-impounding structures within the same watercourse, or within the tributaries of such watercourse, which cumulatively meet the definition of "dam" set forth in Section 2.6 of these regulations constitute a hazard to human life, and failure of one or more of the impounding structures may induce failure of any or all of the remaining impounding structures, he may require the owner or owners of each impounding structure to comply with the requirements of these regulations.

3.4. Incidental Dams.

3.4.1. Roadfills.

3.4.1.a. If the director finds that a roadfill has become a hazard to human life or property through the frequent or continuous impoundment of water, he may order the owner of that roadfill to take all steps that are necessary to protect life or property in accordance with the emergency powers provided under W. Va. Code § 20-5D-10.

3.4.1.b. A certificate of approval will not be required for roadfills.

3.4.2. Bridges.

3.4.2.a. If the director finds that a bridge has become a hazard to human life or property through the frequent or continuous impoundment of water, he may order the owner of that bridge to take all steps that are necessary to protect life or property in accordance with the emergency powers provided under W. Va. Code § 20-5D-10.

3.4.2.b. A certificate of approval will not be required for bridges.

3.4.3. Diversions - A certificate of approval will be required for dikes or other structures used to divert water and otherwise meeting the definition of "dam" set forth in Section 2.6 of these regulations.

3.4.4. Stream Encroachments - If the director finds that a natural drainway has been restricted by filling or other artificial means so that the restriction can or does impound water, and the fill and resulting reservoir meets the height and storage requirements of a "Dam" as defined in these regulations, he may order the fill removed or require a certificate of approval or both.

3.5. Classification of Dams - The applicant for a certificate of approval must propose the hazard classification for his dam based upon the classification guidelines listed in Section 3.5.2 of these regulations and the hazard evaluation performed pursuant to Section 3.5.3 of these regulations. The classification proposed by an applicant is subject to approval by the director.

3.5.1. Changes in Dam Classification - The director will periodically review the hazard classification of each dam subject to these regulations and may reclassify a dam if he determines that the hazard potential has changed. The owner shall be notified by the

division of any hazard classification change.

3.5.2. Hazard Classifications.

3.5.2.a. Class A Dams - Class A dams are those dams located in rural or agricultural areas where failure may damage nonresidential and normally unoccupied buildings, rural or agricultural land, or secondary highways. Failure of a Class A dam would cause only a loss of the dam itself and a loss of property use, such as use of related roads, with little additional damage to adjacent property. Loss of human life resulting from failure of a Class A dam must be unlikely.

3.5.2.a.A. An impoundment exceeding forty (40) feet in height or two hundred (200) acre-feet storage volume shall not be classified as a Class A dam.

3.5.2.b. Class B Dams - Class B dams are those dams located in predominantly rural or agricultural areas where failure may damage isolated homes, primary highways, or minor railroads or may cause the interruption of public utility services. Failure of a Class B dam may cause great damage to property and project operations. Loss of human life resulting from failure of a Class B dam must be unlikely.

3.5.2.c. Class C Dams - Class C dams are those dams located where failure may cause a loss of human life or damage to homes, industrial and commercial buildings, important public utilities, primary highways, or main railroads. This classification must be used if failure may result in the loss of human life.

3.5.2.c.A. A waste disposal dam, the failure of which may cause significant harm to the environment, shall not be designed as a Class A dam.

3.5.3. Hazard Evaluation.

3.5.3.a. Downstream Hazards - In evaluating the hazard potential of a dam in order to determine its hazard classification, a complete evaluation of the downstream area which will be affected in the event of dam failure must be performed. A sudden flooding of inhabited land, a water flow with damaging velocity, a wall of water, or the flooding of inhabited structures will all be deemed to have the potential to result in a loss of human life. The planned or potential future development of downstream areas must also be considered when evaluating hazard classification.

3.5.3.b. Dam Break Analysis - A downstream breach analysis must be performed to evaluate and map the downstream inundation area under assumed

normal conditions and overtopping failure conditions.

3.5.3.b.A. The director may waive the downstream breach analysis required under Section 3.5.3.b of these regulations for a Class A or Class B dam where downstream conditions prevent any future introduction of new facilities or residences that thereby change the hazard classification of the dam.

3.5.3.c. Upstream Hazards - No dam shall be constructed which, during maximum pool conditions, will flood upstream dwellings, public utilities, primary highways, or main railroads unless otherwise approved by the director based upon site-specific conditions.

3.5.4. Risk Assessment - The director may consider a risk assessment for justifying a reduced structure hazard classification based upon failure of the dam by overtopping. The applicant for a certificate of approval must demonstrate through appropriate calculations that all affected dwellings will be inundated and evacuated prior to the dam failure and that property damage and potential loss of human life resulting from the dam failure will not be significantly increased from that which occurred immediately prior to the dam failure. The director will not consider risk assessment based upon planned evacuation, probability of inhabitation, or monetary recovery of property damage.

§ 47-34-4. Certificates of Approval.

4.1. Certificate Required - A person must obtain a certificate of approval from the director in order to place, construct, enlarge, alter, breach, remove, abandon, or perform major repairs upon any dam in this State that falls within the definition set forth in Section 2.6 of these regulations.

4.2. Certificate Issuance.

4.2.1. Certificates of approval may constitute full and final approval of a dam or be issued for alterations or repairs, in which case such certificate may or may not constitute final approval of the dam.

4.2.2. The director will issue or refuse to issue a certificate of approval based upon the following:

4.2.2.a. The receipt of a complete application, including all applicable fees, in accordance with the provisions of Section 5.1 of these regulations;

4.2.2.b. The review of the application form and plan package for sufficiency; and

4.2.2.c. The results of any hearings held in accordance with the provisions of W. Va. Code § 20-5D-7.

4.2.3. Defective applications will be returned to the applicant by certified or registered mail, return receipt requested, in order that he may correct any defect. The applicant must send a corrected application to the director within thirty (30) days of the date of the applicant's receipt of the returned application. The director may extend the thirty-day period upon the receipt of a written request from the applicant.

4.2.4. Upon the receipt of written approval from the director of the sufficiency of the application, the applicant shall immediately publish a Class I legal advertisement in a qualified newspaper, as defined in W. Va. Code § 59-3-1, serving the county in which the proposed dam is to be located or in which the existing dam is located. Such notice shall include the name and address of the applicant, the location of the dam for which the application was filed, and such other information as may be specified by the director in his written approval.

4.3. Hearings Prior to Certificate Issuance - Any person, as defined in W. Va. Code § 20-5D-3, whose life or property may be adversely affected by the issuance of a certificate of approval shall have a right to a hearing before the director. A written request for a public hearing, detailing the specific objections to the issuance of the certificate of approval, must be sent to the director within fifteen (15) days of the publication of the Class I legal advertisement required under Section 4.2.4 of these regulations. Hearings that concern specific objections to the issuance of a certificate of approval will be conducted in accordance with the provisions of W. Va. Code § 20-5D-7 at a location and time set by the director.

4.4. Certificate Revocation or Suspension - The director may revoke or suspend a certificate of approval in accordance with the provisions of W. Va. Code § 20-5D-8 if he determines that a dam for which such certificate was issued constitutes a danger to life and property.

4.5. Certificate Terms and Conditions - A certificate of approval may include such terms and conditions as the director may find necessary for the construction or operation of the dam. These terms and conditions may be amended by the director in accordance with the provisions of W. Va. Code § 20-5D-8.

4.6. Approval to Impound Water - No person may cause a reservoir to initially

fill with water, or refill a drained reservoir, without written approval from the director.

4.6.1. Upon the receipt of a written petition from a dam owner, the director may waive or modify the refilling approval requirement of Section 4.6 of these regulations in a case where frequent draining and refilling of a reservoir is the intended purpose and normal operation of the owner's dam.

4.7. Other Approvals - The director may refuse to issue a certificate of approval or may delay issuing a certificate of approval if the applicant fails to obtain necessary approvals from State or federal agencies.

4.7.1. Waterways Under State or Federal Jurisdiction - Construction of a dam across a waterway which is under the jurisdiction of the State or federal government may require State or federal agency approval prior to issuance of a certificate of approval by the director.

4.7.2. Wetlands - Construction of a dam which may inundate, drain, or otherwise adversely affect wetlands (i.e., swamps, marshes, bogs, and similar areas) may require State and federal agency approval.

§ 47-34-5. Application Procedures.

5.1. Application Preparation and Submission.

5.1.1. Applications for a certificate of approval shall be prepared by or under the direct supervision of an engineer.

5.1.2. Applications shall be submitted on the forms provided by the director. Application forms must be completed in their entirety without unauthorized omissions, alterations, or additions. Applications shall be signed by the applicant and an engineer.

5.1.3. A complete application will consist of a completed and signed application form, all applicable fees, and a plan package containing the information required under Section 6.4 of these regulations.

5.1.4. Plans, reports, specifications, and design drawings shall be signed and sealed by an engineer in accordance with the provisions of Section 6.2 of these regulations.

5.2. Application Review.

5.2.1. Applications will be reviewed for sufficiency by the Dam Safety Office. The review will consider the completeness and technical accuracy of the information submitted and will evaluate all engineering plans and assumptions to determine the safety of the dam.

5.2.2. Applications which are incomplete or otherwise not in compliance with the requirements of these regulations will be returned to the applicant for correction in accordance with the provisions of W. Va. Code § 20-5D-7.

§ 47-34-6. Plans and Specifications.

6.1. Plans and Specifications - Plans and specifications relating to the design, placement, construction, enlargement, alteration, removal, abandonment, or repair of a dam must be prepared in accordance with the requirements of Sections 7 through 12 of these regulations.

6.2. Engineer's Signature and Seal Required - All plans and specifications shall be signed and sealed by an engineer. The engineer's signature and seal are required on each full-size plan sheet, even if the sheets are bound together, and are further required on the front page of any engineering report book and each unbound sheet of drawings or specifications included in appendices or pockets.

6.3. Engineering Practices - All plans and specifications for the placement, construction, enlargement, alteration, breaching, removal, abandonment, or repair of a dam shall be in the charge of an engineer.

6.3.1. Standard Practices - All engineering designs, procedures, processes, and analyses shall be based upon standard, accepted, and sound engineering practices. Practices which are questionable or difficult to prove analytically may be rejected by the director or returned for additional information.

6.3.2. Experimental Practices - Experimental design will not be approved by the director unless the experiment meets the following conditions:

6.3.2.a. Engineering analysis indicates the design is realistic and success is likely;

6.3.2.b. Failure of the experiment to perform properly will not endanger life and property or cause the failure of the dam; and

6.3.2.c. The engineer and dam owner agree to redesign and

modify the experimental design if it does not perform properly.

6.4. Plan Package Organization - Each plan package submitted for approval shall contain the following information, arranged in the following order, unless an alternative submission format is approved by the director:

6.4.1. Project Narrative - A general narrative discussion of the project shall be included in the plan package to detail the following:

6.4.1.a. Existing site conditions;

6.4.1.b. Local geology and geotechnical considerations;

6.4.1.c. Design life of the dam and its appurtenances;

6.4.1.d. Subsidence potential;

6.4.1.e. Design techniques with associated design computations and data;

6.4.1.f. Environmental protection measures for the control of erosion and sedimentation and for the disposal of construction wastes;

6.4.1.g. Method of construction, including clearing and grubbing, topsoil stockpiles, and surface and subsurface drainage structures;

6.4.1.h. Phases of construction; and

6.4.1.i. Routine inspection and maintenance procedures and schedules.

6.4.2. Construction Sequence and Schedule - A proposed or recommended sequence of construction, with a schedule listing the anticipated number of working days necessary to accomplish each item in the sequence, shall be included in the plan package to cover the following general categories:

6.4.2.a. Sediment control measures;

6.4.2.b. Clearing and grubbing;

6.4.2.c. Road or utility relocations;

6.4.2.d. Development of borrow areas;

6.4.2.e. Placement of coffer dams or diversions;

6.4.2.f. Excavation of foundation areas;

6.4.2.g. Excavation of spillways;

6.4.2.h. Placement of embankment or structural materials;

6.4.2.i. Placement of spillways and appurtenances to spillways;

6.4.2.j. Seeding and mulching of the project area;

6.4.2.k. General cleanup of the project area; and

6.4.2.l. Other information as requested by the director.

6.4.3. Project Specifications - Specifications shall be included in the plan package to detail the following:

6.4.3.a. Clearing and grubbing;

6.4.3.b. Soil stockpiles;

6.4.3.c. Subdrain construction;

6.4.3.d. Slopes;

6.4.3.e. Grades;

6.4.3.f. Surface drainage structures;

6.4.3.g. Spreading and compaction requirements, including lift thicknesses, moisture content, and degree of compaction;

6.4.3.h. Material and gradation requirements for subsurface drainage structures;

6.4.3.i. Pipes;

6.4.3.j. Concrete, including testing and curing;

6.4.3.k. Anti-seep mechanisms;

6.4.3.l. Cutoff trenches;

6.4.3.m. Channel and slope protection (e.g., riprap);

6.4.3.n. Project quality control and testing;

6.4.3.o. Blasting;

6.4.3.p. Construction erosion and sediment control;

6.4.3.q. Construction waste disposal;

6.4.3.r. Dust abatement;

6.4.3.s. Revegetation;

6.4.3.t. Installation and reading of monitoring devices;

6.4.3.u. Inspection and maintenance; and

6.4.3.v. Other information as requested by the director.

6.4.4. Maps and Drawings.

6.4.4.a. Maps shall be included in the plan package showing the project area in relation to primary highways, county seats, and major drainages. County highway maps may be used for this purpose.

6.4.4.b. A map showing the limits of the watershed with respect to the project area shall be included in the plan package. The minimum map scale meeting this requirement is a 7-1/2 minute United States Geological Survey topographic map with the project area plotted on it.

6.4.4.c. A plan view map of the project area that shows all disturbed and reservoir areas shall be included in the plan package showing detailed contour intervals (i.e., a five-foot maximum interval).

6.4.4.c.A. The location of the following items, if present, shall be plotted on the plan view map:

6.4.4.c.A.(a) Caves;

6.4.4.c.A.(b) Cemeteries and graves;

6.4.4.c.A.(c) Seeps;

6.4.4.c.A.(d) Springs;

6.4.4.c.A.(e) Mine drainage;

6.4.4.c.A.(f) Underground mine openings;

6.4.4.c.A.(g) Underground mine workings;

6.4.4.c.A.(h) Borings and test pits;

6.4.4.c.A.(i) Cross-sections;

6.4.4.c.A.(j) Project stationing;

6.4.4.c.A.(k) Reference points;

6.4.4.c.A.(l) Instrumentation;

6.4.4.c.A.(m) The subdrain system;

6.4.4.c.A.(n) Diversion channels;

6.4.4.c.A.(o) Surface water drainage channels;

6.4.4.c.A.(p) Spillway channels;

6.4.4.c.A.(q) Borrow source areas; and

6.4.4.c.A.(r) Proposed waste disposal areas.

6.4.4.c.B. Additional detailed plan views of the dam or its spillways and appurtenances may be required by the director.

6.4.4.d. Transverse and longitudinal cross-sections and profiles of the dam shall be included in the plan package showing original ground, subdrain locations, elevations, benches, spillways, and other pertinent features of the project area. A cross-section shall be provided for stability computations showing the dam at critical areas, with subsurface data plotted in accordance with the provisions of Section 7.4.2.a.C.(d) of these regulations.

6.4.4.e. Cross-sections and profiles of major drainage facilities shall be included in the plan package.

6.4.4.f. Construction drawings shall be included in the plan package showing subdrains, spillways, anti-seep mechanisms, and other pertinent structures.

6.4.5. Inventory of Protected Sites.

6.4.5.a. An inventory of sites protected under State or federal law must be conducted by each applicant seeking a certificate of approval to:

6.4.5.a.A. Construct a new dam; or

6.4.5.a.B. Alter or enlarge an existing dam whereby new areas will be disturbed or flooded.

6.4.5.b. The minimum acceptable protected sites inventory shall include the following components:

6.4.5.b.A. A field survey shall be conducted by the applicant or his agents to ascertain the presence of any cave (i.e., a naturally occurring underground subterranean cavity such as a cavern or grotto) within the area to be disturbed or flooded by the project. The location of all caves must then be plotted on the plan view map required under Section 6.4.4.c of these regulations. If no caves are present in the area to be disturbed or flooded, that fact must be noted in a statement attached to the plan view map submitted to the director.

6.4.5.b.B. A field survey shall be conducted by the applicant or his agents to ascertain the presence of any cemetery or grave within the area to be disturbed or flooded by the project. The location of all cemeteries and graves must then be plotted on the plan view map required under Section 6.4.4.c of these regulations. If no cemeteries or graves are present in the area to be disturbed or flooded, that fact must be noted in a statement attached to the plan view map submitted to the director.

6.4.5.b.C. A copy of the plan view map required under Section 6.4.4.c of these regulations shall be sent by the applicant to the West Virginia Division of Natural Resources, Nongame Wildlife Program, P.O. Box 67, Elkins, West Virginia 26241. A letter of transmittal that briefly explains the nature of the applicant's project must accompany the map so that State officials may have the opportunity to assess whether the applicant's project will adversely impact any animal or plant species that is listed by the federal government as endangered or threatened in 50 C.F.R. Part 17. A copy of the applicant's letter of transmittal must be included in the plan package submitted to the director; and

6.4.5.b.D. A copy of the plan view map required under Section 6.4.4.c of these regulations shall be sent by the applicant to the West Virginia Division of Culture and History, Historic Preservation Unit, Building 9, State Capitol Complex, Charleston, West Virginia 25305. A letter of transmittal that briefly explains the nature of the applicant's project must accompany the map so that State officials may have the opportunity to assess whether the applicant's project will adversely impact any historic site that is listed by the West Virginia Division of Culture and History on the State Register of Historic Places. A copy of the applicant's letter of transmittal must be included in the plan package submitted to the director.

6.4.5.c. If either artifacts of historical significance or human remains are uncovered by construction or related activities, the Dam Safety Office must be contacted immediately. The director may suspend activities in the vicinity of such artifacts or remains until appropriate investigations have been conducted.

§ 47-34-7. Design Requirements.

7.1. Hydrologic Considerations.

7.1.1. General Hydrologic Requirements.

7.1.1.a. Hydrologic Investigation.

7.1.1.a.A. A survey shall be conducted to evaluate soil types, land use, land slope, watershed area, runoff curve number, and any other factors needed to establish watershed characteristics. A summary of all hydrologic and hydraulic data compiled in the initial site investigation and used in the analysis shall be included in table or figure form in the plan package.

7.1.1.a.B. A stream flow analysis shall be conducted to evaluate stream flow quantity and quality as it affects the dam and its appurtenances.

7.1.1.b. Design Storm Requirements - All dams shall be designed to meet the following minimum hydrologic criteria based upon hazard classification:

7.1.1.b.A. Class A Dams - Class A dams shall be designed for a minimum of P100+0.12(PMP-P100) inches of rainfall in six (6) hours.

7.1.1.b.B. Class B Dams - Class B dams shall be designed for a minimum of P100+0.40(PMP-P100) inches of rainfall in six (6) hours.

7.1.1.b.C. Class C Dams - Class C dams shall be designed for the probable maximum precipitation of six (6) hours in duration.

7.1.1.c. Antecedent Moisture Conditions - Where applicable to the development of a hydrograph, Antecedent Moisture Condition II (AMC II) may be used unless a different condition class is required by the director.

7.1.1.d. Flood Routings - An analysis shall be performed for the reservoir and spillways which includes inflow hydrographs, stage storage curves, stage discharge curves, and routings. The spillways must be able to safely discharge that portion of the design storm that is not stored in the reservoir. If a computer analysis is used, the input data and output results must be clearly labeled and identified. Trial calculations or intermediate results not relevant to the final results may be omitted from the plan package.

7.1.2. Specific Hydrologic Requirements.

7.1.2.a. Embankment Dams.

7.1.2.a.A. Storage and Discharge.

7.1.2.a.A.(a) Class A dams must be designed with either an open channel spillway only or a combination of principal and emergency spillways. A Class A dam shall be capable of passing that portion of the design storm that cannot be safely stored in the impoundment. The design of a Class A dam must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event.

7.1.2.a.A.(b) Class B dams must be designed with either an open channel spillway only or a combination of principal and emergency spillways. A Class B dam shall be capable of passing that portion of the design storm that cannot be safely stored in the impoundment. The design of a Class B dam must assure that ninety

percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event.

7.1.2.a.A.(c) Class C dams designed with either an open channel spillway only or with an emergency spillway and a principal spillway together must be capable of discharging that portion of the probable maximum precipitation that cannot be safely stored in the impoundment. Class C dams designed with a decant or principal spillway only must be capable of storing the volume of water generated by a PMP rainfall event of six (6) hours in duration. The design of a Class C dam must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event.

7.1.2.a.B. Surface Drainage Control - Surface drainage control devices (e.g., vegetated slopes, benches, groin ditches, and collection channels) shall be provided as necessary to protect the dam and its appurtenances from the effects of erosion. Riprap or other erosion protection measures shall be included where excessive velocity is anticipated or experienced. All surface drainage control devices must be designed to exit safely beyond the downstream toe of an embankment in a natural drainway capable of carrying the design flow without excessive erosion. The 50-year, 6-hour rainfall event shall be used as the design storm for surface drainage systems.

7.1.2.a.C. Spillway Frequency of Operation - Outlet works that incorporate vegetated earth or unlined earth emergency spillways shall be designed so that the average frequency of operation is no greater than the following recurrence schedule, based upon a 6-hour rainfall event:

7.1.2.a.C.(a) Class A Dams - Once in twenty-five (25) years.

7.1.2.a.C.(b) Class B Dams - Once in fifty (50) years.

7.1.2.a.C.(c) Class C Dams - Once in one hundred (100) years.

7.1.2.a.D. Overtopping Embankments - Regardless of their hazard classification, dams designed to overtop in accordance with the provisions of Section 7.4.2.a.D of these regulations shall not overtop more frequently than once in one hundred (100) years, based upon a 6-hour rainfall event.

7.1.2.b. Gravity Dams - Gravity dams may be designed in the same manner as the corresponding hazard classes of embankment type dams in Section

7.1.2.a.A of these regulations except that designed overtopping of the dam may be substituted for the emergency spillway requirements.

7.1.2.c. Waste Disposal Dams.

7.1.2.c.A. Storage and Discharge - The following storage and discharge systems may be used in design of waste disposal dams:

7.1.2.c.A.(a) Open Channel Only or Emergency Spillway with Principal Spillway - A dam designed with either an open channel spillway only or with an emergency spillway and a principal spillway together shall be capable of discharging that portion of the design storm that cannot be safely stored in the impoundment. This type of design must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event. Slurry impoundments shall be provided with a means of removing water to maintain the lowest practical water level.

7.1.2.c.A.(b) Principal Spillway or Decant Only - A dam designed with a decant or principal spillway only shall be capable of storing the volume equivalent to a minimum of one (1) design storm. This type of design must assure that ninety percent (90%) of the stored volume of the design storm will be discharged within ten (10) days after the storm event. Slurry impoundments shall be provided with a means of removing water to maintain the lowest practical water level.

7.1.2.c.A.(c) No Outlet Works - A dam designed without discharge structures shall be capable of storing the volume equal to a minimum of two (2) design storms. Water shall be removed from the impoundment to its lowest practical level by pumping or other means if storm water reduces the storage capacity to one (1) design storm or less.

7.2. Hydraulic Considerations.

7.2.1. General Hydraulic Requirements.

7.2.1.a. Hydraulic Analysis - Using standard engineering practices, a hydraulic analysis shall be performed for the spillways and surface drainage system. Typical cross-section design techniques may be used where constant slopes are encountered. All hydraulic structures shall be designed to safely control the velocity of water in order to prevent excessive erosion. Accepted engineering practices shall be used to design riprap, non-flexible channel linings, bedding, and energy dissipators.

7.2.2. Specific Hydraulic Requirements.

7.2.2.a. Open Channels - Open channels, including open channel spillways, shall be analyzed for flow depth, velocity, nonuniform flow conditions, super-elevation, and hydraulic jumps.

7.2.2.a.A. Stage Discharge - Where an open channel is used as a spillway, a stage discharge rating shall be developed using standard engineering practices for the type and shape of the spillway. In developing the rating, increase in upstream water depth due to change in velocity head must be considered.

7.2.2.a.B. Water Surface Profiles - Where channel slopes or cross-sections vary and nonuniform flow conditions result, a water surface profile may be necessary in order to analyze the channel flow depths and the location of hydraulic jumps.

7.2.2.a.C. Hydraulic Jumps - Where hydraulic jumps will occur, channel sidewall height shall be sufficient to contain the jump. The channel lining shall be designed to withstand the hydraulic jump without damage.

7.2.2.a.D. Critical Flows - Channels shall be designed so that water will not flow at critical depth for extended distances. In channels of varying slope or cross-section where nonuniform flow occurs, the transition through critical flow shall be as rapid as possible.

7.2.2.a.E. Super-elevation - Channel walls shall be designed to contain super-elevated flows in curves. Where curves occur in spillway channels, the director may approve super-elevation wall height based upon one-half of the design flow, but not less than the P100 design flow, provided the excess overflow will impinge on natural ground and will not endanger the dam, human life, or property.

7.2.2.b. Closed Conduit Systems - Closed conduit systems including principal spillways, risers, and pipes shall be analyzed to determine the controlling limits of weir, orifice, and pipe flows.

7.2.2.b.A. Risers and Drop Inlets - Risers shall be protected with a designed trash rack and anti-vortex device. The drop inlet shall be sized to provide a rapid transition from partial to full pipe flow conditions.

7.2.2.b.B. Stage Discharge - When a closed conduit system is used as a principal system, a stage discharge rating shall be developed using standard

engineering practices for weir, orifice, and pipe flow calculations.

7.2.2.b.C. Slug Flow - Conduit systems shall be designed to avoid formation of alternating partial and full pipe flow conditions through proper selection of pipe slope and headwater or tailwater conditions.

7.3. Geotechnical Considerations.

7.3.1. Geotechnical Investigation - A geotechnical investigation shall be performed. The quantity, location, and depth of borings, test pits, or trenches must be adequate for the evaluation of the bearing capacity and subsurface conditions for the proposed structure and may vary based upon the height, impoundment volume, and hazard classification of the dam. Factors to be considered include depth of soil, characteristics of bedrock, and determination of groundwater location. Results of in-situ testing and soil sampling shall be reported in the plan package. Soil profiles shall be utilized for critical foundation locations of the structure, spillways, and other pertinent locations which affect the safety of the structure. A geological study shall also be conducted to evaluate stratigraphy, landslides, bedrock discontinuities such as soft seams, joints, joint systems, bedding planes, and fault zones which may adversely affect the structure's performance. Past and future mining including thickness of coal seams, depth and type of rock above the coal seam, and previous or expected subsidence problems shall be considered where subsidence may affect the safety of the structure.

7.3.1.a. Project Area Survey - A project area survey shall be conducted to establish baselines and elevations of the dam embankments, reservoir and borrow areas, and appurtenant structures. The survey shall locate all test pits, borings, gas wells, oil wells, water wells, mine openings, landslides, and areas of natural seepage.

7.3.1.b. Borrow Areas - Borrow areas shall be evaluated for appropriate construction materials and required volume. Borrow areas and excavation materials shall be tested to determine the suitability of material for use in embankments or drains.

7.3.2. Laboratory Testing - Laboratory tests shall be conducted on a sufficient number of samples of foundation and embankment materials to provide an accurate representation of soil conditions. Tests shall include, but not be limited to, a complete soil classification including grain size, sieve, hydrometer analysis, Atterberg limits, density, water content, compaction tests, shear strength, consolidation, and permeability where applicable. Compaction and proctor curves shall be developed for all fill materials as appropriate.

7.3.3. Geotechnical Evaluation - A summary of all geotechnical data determined in the initial site geotechnical investigation and used in the analysis shall be included in table or figure form in the plan package.

7.3.3.a. Seepage Analysis - An analysis of seepage and its detrimental effects on structural integrity shall be made. The analysis shall include consideration of potential piping in the embankment, foundations, and abutments. Seepage control measures shall be specified as necessary in order to enhance the stability of the embankment and adjacent area. Drainage systems shall be designed and constructed using a material approved by the director and shall be protected by a properly designed filter zone using standard geotechnical engineering design practices. The design shall specify methods for sealing or controlling seepage encountered in foundation zones during construction.

7.3.3.a.A. Foundation Treatment - If analysis indicates a highly fractured foundation, the engineer shall specify necessary treatment of the foundation zone including, but not limited to, foundation grout curtains, dental concrete treatment of fractures or overhangs, and detailed methods of foundation zone cleaning. Material used in grouts shall be specified in accordance with the provisions of Section 7.4.1.a.B of these regulations.

7.3.3.b. Foundation Stability - The foundation must be designed to have adequate bearing capacity to support the embankment and any appurtenant works. Potential subsidence and settlement and their consequences shall be considered using standard engineering practices. Special attention shall be given to differential settlement which would lead to cracking of the dam. Spillway pipes on compressible foundations shall be protected from damage due to settlement.

7.3.3.c. Landslides - The potential for landslides, as determined in the initial project area investigation, shall be evaluated by the engineer. If landslides noted in the project area could cause instability of the dam or appurtenant structures, blockage of spillways and other critical drainage structures, or overtopping of the dam by displacement of water in the reservoir area, such conditions shall be corrected to a minimum static safety factor of 1.5.

7.4. Structural Considerations.

7.4.1. General Structural Requirements - All structures shall be designed to perform as intended for the design life of the dam with proper maintenance or replacement.

7.4.1.a. Structural Materials - Materials selected for use in the dam shall be of adequate quality and durability for the intended purpose of the structure. All structures shall be designed to have sufficient strength plus an adequate safety factor against failure during maximum anticipated loading conditions.

7.4.1.a.A. Earth Materials - Earth materials selected for use in dam construction shall be free from roots, brush, organic materials, construction waste, and other debris. Where rock or rock fill is specified, the rock shall be durable and not subject to slaking or breakdown. Size gradations of the earth materials shall be specified to perform as planned. Compaction requirements for earth materials shall be specified in the plan package.

7.4.1.a.B. Concrete Design - Concrete shall be designed in accordance with standard engineering practices. Concrete design specifications shall include materials, proportioning, form-work, reinforcement, joints and embedded items, production, placing, repair of surface defects, finishing, curing and protection, testing, evaluation and acceptance, and allowable tolerances for acceptance.

7.4.1.a.B.(a) Concrete Specifications - The engineer shall specify the nature of concrete to be used with sufficient detail for on-site quality control. The concrete may be specified by specific mix, aggregate, water content, additives, compressive strength, slump, and air entrainment or by reference to specific standards of concrete quality. If published standard specifications are referenced, a copy of the standard or pertinent sections of the standard shall be included in the plan package.

7.4.1.a.B.(b) Concrete Placement - The engineer shall specify methods and limits of placement of the concrete including foundation preparation, maximum lift height, maximum time allowed between mixing and placement, methods of working into forms and corners, methods of consolidation and use of vibrating devices, and allowable ambient air temperatures and concrete temperatures.

7.4.1.a.B.(c) Concrete Curing - The engineer shall specify the method of curing the concrete including moist curing or membrane curing, wetting, types of covering, acceptable curing temperature range of the concrete, any anticipated cold weather curing specifications or methods such as protection from freezing and insulation methods, hot weather placement methods and limitations, and curing time.

7.4.1.a.B.(d) Concrete Finishing - The engineer shall specify the type of finishing to be applied to the concrete and the acceptable temperature range.

7.4.2. Specific Structural Requirements.

7.4.2.a. Embankment Dams.

7.4.2.a.A. Selection of Materials - Material selected for construction of embankments shall be select earth material that is free from roots, brush, organic matter, construction waste, and other debris. The material must not be subject to breakdown or chemical reaction. Unless otherwise approved by the director, the selected material must be thoroughly tested for density, shear strength, liquid and plastic limits, and optimum moisture content. The source of the material and available quantities shall be identified and adequate sampling performed in order to attain consistent quality and soil characteristics.

7.4.2.a.B. Zoned Embankments.

7.4.2.a.B.(a) Filter Drains - Filter drains shall be used in embankment zones where necessary to intercept seepage, reduce phreatic level, and reduce potential for internal erosion. Drain outlets shall be visible, not submerged under normal conditions, unobstructed, and protected with an animal guard where conduits are utilized.

7.4.2.a.B.(a)(A) Gradations - The gradations of the filter material shall be sized to prevent or resist the migration of embankment material into the voids of the filter. The filter shall be permeable relative to the surrounding embankment material.

7.4.2.a.B.(a)(B) Size - The filter drain shall be capable of passing the maximum anticipated seepage flows without excessive pore pressure. The combination of filter permeability and area shall be considered in sizing the drain.

7.4.2.a.B.(a)(C) Durability - The material used in the filter shall be hard, durable material that is not subject to slaking, breakdown, or chemical reaction.

7.4.2.a.B.(a)(D) Conduits - Perforated pipes may be used in the filter drain to increase capacity. Perforations shall be compatible with the filter gradations so that filter material will not enter the pipe. The pipe shall be capable of supporting the fill load and shall be of a material which will last for the design life of the structure. Corrugated metal pipe shall not be used in critical areas of the embankment or in any areas where the pipe is not reasonably accessible for replacement.

7.4.2.a.B.(a)(E) Filter Cloth - Filter cloth shall not be used in critical areas of the embankment or in any areas where the cloth is not reasonably accessible for replacement.

7.4.2.a.B.(b) Diaphragm Cutoff Walls - When concrete cutoff walls are used as an impermeable barrier, the concrete wall shall be placed upon an adequate foundation and be constructed of reinforced concrete. Where pipes pass through the concrete wall, adequate support for the pipe shall be provided to prevent differential settlement and pipe shearing.

7.4.2.a.C. Embankment Stability.

7.4.2.a.C.(a) Embankment Safety Factors - Slope stability shall be analyzed to show that the embankment design achieves the following factors of safety under the conditions listed:

7.4.2.a.C.(a)(A) A safety factor of 1.5 for the embankment loading conditions specified in Section 7.4.2.a.C.(c) of these regulations;

7.4.2.a.C.(a)(B) An end of construction safety factor of 1.3;

7.4.2.a.C.(a)(C) A rapid drawdown safety factor of 1.2; and

7.4.2.a.C.(a)(D) An earthquake safety factor under steady-state seepage conditions of 1.2 using seismic loading appropriate to the geological site conditions.

7.4.2.a.C.(b) Appurtenance Structural Stability - Embankments constructed as part of an appurtenant structure where failure will lead to a dangerous condition in the dam shall achieve a static safety factor of 1.5.

7.4.2.a.C.(c) Embankment Loading Conditions - Loading conditions shall assume a long-term steady-state condition with the phreatic surface originating at the elevation of the emergency spillway crest for embankment dams with emergency spillways or at a maximum design pool elevation for embankment dams without spillways.

7.4.2.a.C.(d) Stability Analyses - All slope stability analyses shall be performed using standard engineering practices. Exceptions to this

requirement will be allowed by the director only where there is sufficient evidence to indicate that slope failures will not occur.

7.4.2.a.C.(d)(A) Critical cross-sections of the dam using equal X and Y axes scales shall be provided in the plan package. The cross-sections shall show the embankment limits, foundation zones, soil zones, phreatic line, assumed reservoir elevation, stability arcs or failure planes through the dam, and resulting safety factors for each critical arc or failure plane shown.

7.4.2.a.C.(d)(B) A listing of soil zone unit weights, angles of internal friction, and cohesion values for each soil shown on the cross-section shall be provided in the plan package. If an alternative analysis is utilized, assumed soil values of the analysis shall be shown.

7.4.2.a.D. Overtopping Embankments.

7.4.2.a.D.(a) Rock-Covered Embankments - Rock - covered embankments shall be designed so that the rocks selected will be sized to withstand the maximum depth and velocity of the overtopping flow and be individually placed to maximize the interlocking effect. A minimum of two (2) layers of boulders is required. Boulders shall cover the crest, downstream face, and necessary areas of the upstream face of the dam and extend beyond the dam abutments to the extent necessary to contain the overtopping flow depth. Graded smaller rock shall fill the voids where the boulders contact the embankment to prevent erosion due to flow through the voids. The rock cover may be covered with soil and vegetated, provided that the equipment used to place the soil will not break the rock.

7.4.2.a.D.(b) Roller-Compacted Concrete Embankments. Roller-compacted concrete lift thickness and width shall be sized to withstand the maximum anticipated loading and uplift forces. Filter drains and weep holes shall be provided to relieve hydrostatic pressure behind roller-compacted concrete facings. The roller-compacted concrete may be covered with soil and vegetated.

7.4.2.b. Gravity Dams.

7.4.2.b.A. Stability Loading Conditions - Loading conditions for the stability analysis shall assume maximum overflow head from the design storm.

7.4.2.b.B. Gravity Dam Stability.

7.4.2.b.B.(a) Overturning - The reaction of all forces

must act within the middle one-third of the base. This requirement may be modified by the director if detailed computations prove that overturning will not occur.

7.4.2.b.B.(b) Sliding - The dam shall have a factor of safety against sliding of at least 3.0 for normal loading conditions and 1.5 for maximum loading conditions.

7.4.2.b.B.(c) Bearing - The factor of safety against bearing failure shall be at least 1.5 for maximum stress at the downstream toe.

7.4.2.c. Waste Disposal Dams - The potential for liquefaction must be considered and the design shall include safeguards against the development of this condition.

7.4.2.d. Spillways - All spillways shall be designed to discharge an adequate distance beyond the downstream toe of the dam in a natural drainway to prevent erosion of the downstream toe or other detrimental effects to the dam structure.

7.4.2.d.A. Conduit Spillways - Inlets shall be protected by a designed trash rack and riser type spillways shall be designed to prevent detrimental vortexing. Risers shall have adequate weight to be non-buoyant and shall be of sufficient strength to withstand maximum dynamic water and ice forces. Foundations for risers shall be designed to support the riser without serious movement or deformation.

7.4.2.d.A.(a) Conduits - Pipe conduits shall be placed on a designed foundation and bedding of sufficient strength to minimize settlement and other detrimental effects to the conduit. Anti-seep or anti-piping mechanisms shall be provided for all conduits passing through the dam, foundation, or abutments to control seepage along the pipe. Design allowances shall be made to compensate for differential settlement, elongation, and movement of the pipe conduit if the cradle is placed on a yielding foundation. Pipe conduits shall be of sufficient strength to support the maximum external loads and the maximum internal hydraulic pressure without leaking, and shall resist uplift pressures. The pipe conduit shall be constructed of material which will not deteriorate during the design life of the structure.

7.4.2.d.A.(a)(A) Use of Corrugated Metal Pipes - Corrugated metal pipes, whether coated or uncoated, shall not be used in new Class B or new Class C dams. Corrugated metal pipes in existing dams must be either replaced with new pipe or retrofitted with an appropriate liner if the director determines that the existing pipe constitutes a hazard to the proper operation of the dam because the pipe has developed leaks, has deteriorated, or has otherwise ceased to function properly.

7.4.2.d.A.(b) Outlets - Pipe conduits shall be designed to outlet in a natural drainway or a designed channel leading to a natural drainway. An energy dissipator shall be provided to eliminate erosion at the pipe outlet and be designed for maximum pipe flow. If pipe blockage by animals may occur, the pipe outlet shall be protected by an animal guard.

7.4.2.d.A.(c) Gated Drain Pipe Required - All new freshwater dams shall have a gated drainpipe for draining the impoundment. The gate shall be located in the reservoir or upstream of the cutoff wall or impermeable zone. If the gate is located within the embankment or structure, a service well shall be provided. The elevation of the gate system shall be such that the reservoir will be drained completely to original stream level. The drain system shall be designed to drain ninety percent (90%) of the volume of stored water at normal pool in ten (10) days including normal base flow and have a minimum capacity of three (3) times the normal base flow for the watershed with a headwater-to-diameter (HW/D) ratio of 1.5, unless otherwise approved by the director. The drain conduit shall meet the requirements for conduits set forth in Section 7.4.2.d.A.(a) of these regulations. A designed trash rack shall be provided at the inlet of the drain. The controls to operate the drain gate shall be accessible without the use of specialized equipment or of divers. The drawdown rate for reservoir storage volumes in excess of two thousand (2000) acre-feet may be established by the director.

7.4.2.d.A.(d) The term "gate" as used in these regulations is a general term referring to a device used for controlling water flow.

7.4.2.d.B. Open Spillways - Unless specifically excluded, spillways of this type include the various designs of open type spillways including open channel, side channel, chute, labyrinth, and ogee.

7.4.2.d.B.(a) Earth Spillways - Spillways that are constructed of or in earth material shall be designed to pass the maximum design flow without excessive erosion. Earth spillways shall not be constructed over dam embankment fill material.

7.4.2.d.B.(a)(A) Flexible Linings - Vegetation, rock riprap, soil reinforcement, or other flexible linings may be used to increase flow quantities and velocities in earth spillways within design limits.

7.4.2.d.B.(b) Concrete Spillways.

7.4.2.d.B.(b)(A) Concrete - The engineer shall specify the grade and strength of concrete to be used in the spillway construction. The

concrete structure shall be of sufficient strength to withstand the maximum design applied load.

7.4.2.d.B.(b)(B) Foundation - Concrete shall be placed on a prepared foundation and bedding capable of sustaining the applied loads without excessive deformation.

7.4.2.d.B.(b)(C) Drains - Designed filter drains and water pressure relief devices shall be provided under concrete slabs and walls to collect and safely convey water from seepage or leakage of construction joints and to relieve uplift pressure from seepage conditions.

7.4.2.d.B.(b)(D) Joints - Construction joints shall be made watertight by use of a sealant material. Sliding joints shall be supported by a slab to maintain alignment.

7.4.2.d.B.(b)(E) Cutoff Barriers - Cutoff barriers keyed into the foundation shall be provided to prevent or reduce seepage flow under the spillway.

7.4.2.d.B.(b)(F) Energy Dissipators - An energy dissipator shall be provided to reduce the hydraulic energy at the end of the spillway. The dissipator shall be designed to function properly for flows of at least one-half of the design spillway flow. Flows in excess of the design capacity of the energy dissipator shall not endanger the dam or its appurtenances and may result only in erosion.

7.4.2.d.B.(c) Nonstandard Spillway Design - The director may reject any spillway design if such design is of a nonstandard or untested nature and it is not possible to analytically predict the performance of the spillway or the detrimental effects of cross-waves, eddies, vortices, super-elevation, or hydraulic jumps within the spillway system.

7.4.2.e. Water Supply Pipes - Water supply pipes through a dam shall be constructed of a long-life, high-strength material. Welded joints or mechanical joints with sealing rings, or an alternative sealing method approved by the director, shall be utilized. Pipes shall be properly bedded to reduce differential settling or elongation. Anti-seep mechanisms or filter drains shall be provided to prevent piping along the exterior of the pipe. If the pipe is enclosed in or passes through concrete, the relative coefficients of expansion shall be considered. Anti-corrosive measures shall be employed if soil tests indicate corrosion may be a problem. An upstream shutoff valve shall be installed on all new dams or when upgrading existing dams where reservoirs are to be

drained as part of the upgrading. The section of the pipe through the dam shall be capable of withstanding a minimum pressure of twice the maximum reservoir head. The pipe shall be pressure-tested for leaks at maximum reservoir head pressure prior to the final covering of the pipe installation.

7.5. Miscellaneous Considerations.

7.5.1. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of Section 8.1.13 of these regulations shall be included in the project design.

7.5.2. Waste Disposal Areas - The engineer shall delineate locations in the project area which are to be used as waste disposal areas.

7.5.3. Instrumentation - The engineer shall recommend instrumentation as necessary to monitor and measure performance of new dams or modifications to existing dams. The engineer shall specify the types and purpose of the recommended instrumentation.

7.5.3.a. Piezometers or Observation Wells - Piezometers or observation wells may be required by the director on embankment type dams to monitor phreatic level and water pressures in critical areas of the embankment and, if necessary, the foundation or abutments. All piezometer or well heads shall be anchored in concrete and protected from vandalism with a locking metal cylinder surrounding the piezometer or well pipe.

7.5.3.b. Survey Monuments - Survey monuments may be required by the director on embankment and gravity dams to monitor displacement, settlement, rotation, and deformation. Survey monuments on earth dams shall be sufficiently embedded into the structure to prevent localized movement of the monument. Protective casings shall be installed if necessary to prevent damage or forced movement of the survey point.

7.5.4. Staged Construction - Waste disposal dams designed in stages of construction shall be capable of storing or passing the design storm specified in Sections 7.1.1.b and 7.1.2.a.A of these regulations during all stages of construction except during the initial start-up period, unless otherwise approved by the director. During the initial start-up period, the dam shall be capable of storing or passing the P100 rainfall event as soon as possible. Construction shall increase storm capacity, reaching the full design storm capacity within two (2) years.

§ 47-34-8. Construction or Modification of a Dam.

8.1. Construction Requirements.

8.1.1. Notification of the Commencement of Construction - Prior to the commencement of construction activities in the project area, the person who has been issued a certificate of approval, or his representative, shall notify the director of the following:

8.1.1.a. The intent of the contractor to start construction in the project area and the date of such start-up.

8.1.1.b. The name, address, and telephone number of the owner's authorized contact person at the project area who is responsible for communicating with the Dam Safety Office and for receiving inspections reports and legal notifications.

8.1.2. Conformance with Plans - All work undertaken in the construction or modification of a dam shall be in strict conformance with the plans and specifications contained in the plan package submitted under Section 5.1 of these regulations and approved by the director. Any changes to the approved plans and specifications shall be submitted to and approved by the director prior to implementation.

8.1.3. On-Site Documents - A copy of the certificate of approval, the approved plans and specifications, all outstanding notices to comply or orders to comply that have been issued by the director, and the monitoring and emergency action plans prepared in accordance with the provisions of Sections 15.6 and 15.7 of these regulations shall be available at the project area office for reference by construction personnel and the director.

8.1.4. Adverse Weather Conditions - Construction work shall be suspended on all or part of the project when adverse weather conditions (e.g., prolonged precipitation, extreme temperatures) jeopardize the performance of work in conformance with the approved plan package.

8.1.5. Clearing and Grubbing - Clearing and grubbing shall be performed in the foundation, borrow, and soil stockpile areas. Clearing is required in the maximum permanent pool area unless otherwise approved by the director.

8.1.6. Foundation Preparation - Foundation preparation shall include installation of keyways and subdrains, removal of soft areas, and similar project area preparation operations dictated by the approved plans and specifications and by project

area conditions. The foundation shall be inspected by the director prior to placement of embankment materials. If foundation problems are discovered during this inspection, additional foundation preparation may be required by the director.

8.1.7. Placement of Materials.

8.1.7.a. All fill shall be placed in accordance with the approved plans and specifications.

8.1.7.b. Compaction testing shall be completed as specified in the approved specifications; the results of such testing shall be reported in accordance with the provisions of Section 8.4.1 of these regulations.

8.1.7.c. Filter drains shall be constructed in accordance with the approved plans and specifications. Filter material shall be tested for compliance with design gradations; the results of such testing shall be reported in accordance with the provisions of Section 8.4.1 of these regulations. Filter materials shall be placed to prevent segregation and contamination and shall be concurrently covered to prevent contamination or damage.

8.1.8. Grading.

8.1.8.a. All fill shall be graded in accordance with the approved plans and specifications.

8.1.8.b. The working surface and outslopes of the fill shall be concurrently graded through all phases of embankment construction.

8.1.8.c. The top of the fill shall be crowned to provide positive drainage during construction.

8.1.8.d. Final grading shall be conducted in order to facilitate revegetation.

8.1.9. Spillways and Appurtenances.

8.1.9.a. Spillways and appurtenances shall be constructed in accordance with the approved plans and specifications.

8.1.9.b. When downslope placement of fill material is used in the construction of spillways, the fill material shall be compacted in horizontal layers to

achieve the design configuration.

8.1.9.c. All riprap material shall be of hard, durable rock which is not acid-forming or toxic. Riprap shall be placed to prevent size segregation.

8.1.9.d. When bedding is used under riprap, the rock material shall be placed in a manner so as not to damage or contaminate the bedding.

8.1.9.e. When protective channel linings are specified, the linings shall be installed as soon as the channel is constructed to grade in accordance with the approved plans and specifications.

8.1.9.f. When concrete is used in construction of spillways and appurtenances, the concrete shall be placed, cured, and finished in accordance with the provisions of Sections 7.4.1.a.B.(b) through 7.4.1.a.B.(d) of these regulations. Standard engineering tests shall be performed in accordance with the provisions of Section 8.2.2.a of these regulations and reported in accordance with the provisions of Section 8.4.1 of these regulations.

8.1.9.g. All pipes, risers, and appurtenances shall be installed in accordance with the approved plans and specifications. Compaction testing shall be completed to ascertain that fill material around pipes, risers, and appurtenances has been placed in accordance with the approved plans and specifications; the results of such testing shall be reported in accordance with the provisions of Section 8.4.1 of these regulations. Sufficient fill shall be placed over pipes so as to prevent damage by heavy equipment.

8.1.10. Minimum Stream Flow - An adequate flow of water may be required by the director in the stream below the dam during construction and reservoir filling to maintain water quality in the stream and to support fish and other aquatic life. The director may require stream flow augmentation in accordance with the provisions of Section 15.3.2 of these regulations.

8.1.11. Blasting - Blasting may only be utilized in accordance with and as specified in the approved plans and specifications. Blasting based upon unforeseen project area conditions not covered in the approved plan package shall not be performed prior to approval by the engineer with the concurrence of the director.

8.1.12. Storm Water Discharge - The sequence of construction work shall be planned to maximize the safe discharge of storm water while minimizing the amount of water retained in the impoundment. Either the principal spillway structures, including inlets and outlets, shall be operable prior to placement of construction material above the original valley elevation or diversion channels approved by the director shall

be in place.

8.1.13. Erosion and Sediment Control.

8.1.13.a. General Requirements - Erosion and sedimentation must be controlled to prevent a degradation of land and streams below the dam or project area, including visible deposits of sediment, and to prevent any violation of State water quality standards. Erosion and sediment control measures shall, at the minimum, conform with current erosion and sediment control reference manuals and apply to the entire project area.

8.1.13.b. Specific Requirements - Cleared areas, borrow areas, disturbed areas along stream channels and waterways, and fills, whether complete or in progress, must be equipped with erosion and sediment control devices (i.e., diversions, waterways, sediment basins, straw bale dikes, or silt fences).

8.1.13.b.A. Location of Sediment Control Devices - Erosion and sediment control devices must be located as close to the disturbed area as practical. Effort must be made to contain the sediment load within the disturbed area in order to prevent the entry of sediments into the natural drainway or stream.

8.1.13.b.B. Removal of Sediment Control Devices - Erosion and sediment control devices must remain in place until permanent vegetation is established or the area is otherwise stabilized. Prior to the removal of the devices, trapped sediment must be removed and placed in a location approved by the director. Straw bale dikes and silt fences must be removed when no longer needed; sediment basins or ponds must be abandoned in a manner approved by the director. Barren and denuded areas remaining after the removal of a control device must be revegetated.

8.1.13.b.B.(a) The director may modify or waive the requirements of Section 8.1.13.b.B of these regulations for erosion and sediment control devices that are located within the impoundment area of the dam.

8.1.13.b.C. Cleaning Frequency - Sediment control diversions, silt fences, straw bale dikes, and waterways must be inspected once each week, and after each rainfall, and accumulated sediment must be removed in order to maintain design capacity. Sediment ponds, basins, and traps must be restored to design capacity when sediment accumulation approaches sixty percent (60%) of design capacity, or more frequently if so specified by the director in writing.

8.1.13.b.D. Temporary Seeding and Mulching - Temporary

seeding and mulching shall be utilized on bare areas where no construction activity is anticipated for a period of three (3) or more weeks. Areas that shall receive seeding and mulching include the reservoir area, borrow areas, soil stock piles, and steep fill slopes where no further work is planned prior to final grading. Where seeding is not feasible due to severe slope or time of year, the director may approve mulching alone at a rate of three (3) tons of straw or hay per acre, or equivalent.

8.1.13.b.E. Water Routing - Water that is pumped or drained from work areas (e.g., excavations, foundations, and below grade fills) must be routed to properly-sized sediment control devices so that any sediment contained in the water is removed prior to discharge of the water from the project area. Pump discharges may not cause erosion or suspension of additional solids. No untreated water may be pumped or drained to the natural stream or stream diversion channel.

8.1.13.b.F. In-Stream Treatment - Barriers, such as silt fences or straw bales, located in the natural drainway or stream will not be considered acceptable as the primary means of sediment control for the project area. Properly designed sediment basins or ponds may be used for sediment control in the natural drainway or stream if the location of the basin or pond does not cause significant additional disturbance in undisturbed downstream areas. Use of a starter dike or the dam under construction may be considered appropriate for sediment control of the reservoir area provided the necessary detention time is achieved.

8.1.13.b.G. Sediment Control During Construction - Erosion and sediment control measures must be in place prior to the beginning of dam construction activities. Clearing and grubbing or sediment control measures not specified for the beginning of construction must be implemented in a timely manner as needed.

8.1.13.b.H. Permanent Erosion Measures - Permanent measures (e.g., vegetation, grading, diversions, waterways, and outlet structures) shall be included on all completed or existing dams, where applicable, to prevent the erosion of embankments, abutments, stream channels, and waterways during the life and operation of the dam.

8.1.14. Disposal of Construction Wastes.

8.1.14.a. General Disposal Requirements - All waste materials that result from construction activities shall be disposed of in a manner approved by the director.

8.1.14.b. Specific Disposal Requirements.

8.1.14.b.A. Surplus Waste Materials - Surplus soil and rock materials shall be deposited in waste disposal areas delineated in the approved plans.

8.1.14.b.B. Organic Waste Materials - Trees, brush, root masses, and construction-related wood materials may be either buried in waste disposal areas delineated in the approved plan package or burned in accordance with local burning ordinances and State air pollution control regulations.

8.1.14.b.C. Concrete Waste Materials - New or old waste concrete materials may be disposed of in areas approved by the director for surplus soil and rock materials. New, unset waste concrete shall not be deposited in a location where it will enter watercourses, either directly or indirectly as a result of runoff. After it has set, the new waste concrete may be moved to waste disposal areas delineated in the approved plans.

8.1.14.b.D. Other Waste Materials - Chemicals, petroleum products, plastics, garbage, sewage, and any associated containers shall be disposed of in a manner approved by the director.

8.1.14.b.E. Off-Site Waste Materials - No waste materials or soil waste may be transported to the project area for disposal.

8.1.15. Dust Abatement - The contractor shall fully suppress dust on haul and access roads and as necessary within the project area. Water, or an alternative dust palliative approved by the director, shall be used for dust suppression; the use of oil or waste oil is prohibited.

8.1.16. Access Roads - A permanent access road shall be provided to each dam site. The road must be adequate for emergency vehicular traffic. Single lane unpaved roads are acceptable provided the roads are properly maintained. The access road must be designed and located as to not be unduly affected by stream or spillway flows during heavy rainfall events. The road may be secured with a locked gate provided that the key is available to dam monitors and State and local emergency personnel for emergency response.

8.2. Quality Control.

8.2.1. Construction Monitoring.

8.2.1.a. All construction activities shall be monitored by an engineer or his designated representative. Construction monitoring shall not be the

responsibility of the construction contractor unless specifically approved by the director in writing .

8.2.1.b. Responsibility for assessing the quality of the workmanship and ascertaining compliance with the approved plans and specifications shall be vested primarily in the owner's engineer. The Dam Safety Office shall also monitor construction activities and workmanship in order to ascertain compliance with the approved plans and specifications, in accordance with the provisions of W. Va. Code § 20-5D-9.

8.2.1.c. Critical phases of construction shall be monitored by the engineer or his designated representative constantly during active construction; noncritical phases of construction shall be checked at least once per day during active construction.

8.2.1.d. Additional supervision or testing will be required by the director if evidence of inadequate construction supervision exists.

8.2.2. Materials Testing - Construction materials shall be periodically tested on-site to ascertain compliance with design specifications in the approved plan package. Final quality control testing shall not be the responsibility of the construction contractor.

8.2.2.a. Concrete Testing - Routine tests of slump, air entrainment, and temperature shall be performed on each truck delivery. Cylinder samples for compression testing shall be taken each day or every twenty-five (25) cubic yards of delivered concrete, whichever is more frequent, unless otherwise required by the director.

8.2.2.b. Earth Fill Testing - Earth fill materials shall be tested for compaction and moisture content every alternate layer or each one thousand (1,000) cubic yards, whichever is more frequent. Random fill shall be evaluated for compliance with approved gradation specifications. Critical fill areas shall have gradation tests performed to evaluate compliance with the approved specifications.

8.2.2.c. Filter Materials Testing - Gradation tests shall be performed on filter materials. Close visual observation for signs of material segregation shall be performed. Additional tests may be required by the director to determine durability and soundness of the filter material.

8.3. Construction Inspections.

8.3.1. Inspections During Construction.

8.3.1.a. A visual inspection for construction progress, unstable conditions, quality control, and conformance with the approved plans and specifications shall be held at least once each working day (or more frequently as determined by the engineer). The inspection shall be performed by an engineer or a person under the direct supervision of the engineer. The frequency of inspection may be changed by the director depending upon specific project area conditions.

8.3.1.b. Additional inspections shall be held after each heavy rainfall event in order to detect problems and propose remedial measures. These inspections shall be performed by an engineer or a person under the direct supervision of the engineer.

8.3.1.c. Instrumentation shall be monitored every seven (7) days unless otherwise specified by the engineer. Monitoring shall be performed by an engineer or a person under the direct supervision of the engineer. The frequency of monitoring may be changed by the director depending upon specific project area conditions.

8.3.2. Final Construction Inspection - Upon the completion of the construction or modification of a dam, a joint inspection shall be conducted by the director and the engineer. The purpose of the inspection is to verify that all work has been accomplished in accordance with the approved plan package.

8.3.3. Acceptance of Construction - When the dam owner is advised by the director that the construction appears satisfactory, the owner shall submit to the director a certification by an engineer that all construction was in substantial conformance with the approved plans and specifications, including any modifications that have been approved by the director. This certification shall be submitted within ninety (90) days of the director's advisement. As-built drawings, including all variations from the original specifications and changes in location of borrow or waste disposal areas, shall be submitted with the engineer's certification. If substantial modifications of the original specifications have been made during the construction period, the director may require that a corrected application form be submitted. Upon the receipt of the engineer's certification with the as-built drawings (and a corrected application form, if necessary), a letter of acceptance will be issued by the director.

8.3.4. Completed Dams - After acceptance of construction by the director, the dam and its appurtenances shall be inspected annually for a period of three (3) years by an engineer experienced in such inspections. The director reserves the right to attend any inspection and require prior notification of the inspection by the owner of the dam. A report of each inspection shall be prepared and filed with the director in accordance with the provisions of Section 15.5.1 of these regulations.

8.4. Construction Reporting Requirements.

8.4.1. Monthly Progress Reports During Construction - A written report containing the results of each inspection of construction progress shall be submitted to the director every month while the dam and its appurtenances are under construction. The report shall include, but not be limited to, specific instrumentation readings, test results, freeboard, crest elevation, and specific construction or quality control problems with documentation of implemented solutions. Upon the completion of the construction or modification of the dam, notice shall be given by the dam owner to the director so that a final construction inspection can be made in accordance with the provisions of Section 8.3.2 of these regulations.

8.4.2. Post-Construction Inspection Reports - A report shall be submitted to the director by the dam owner reporting the findings of the final construction inspection required under Section 8.3.2 of these regulations. Certification by an engineer shall be submitted to the director with the inspection report to verify that the dam and its appurtenances were constructed in substantial conformance with the approved plans and specifications and that the dam and its appurtenances are functioning as designed.

§ 47-34-9. Breaching of a Dam.

9.1. Application to Breach a Dam - The owner of a dam must obtain a certificate of approval from the director prior to the breaching of the dam. A complete application in accordance with the provisions of Section 5.1 of these regulations must be submitted to and approved by the director prior to the commencement of breaching activities.

9.1.1. Plan Package Requirements - The plan package submitted in order to breach a dam shall be in accordance with the applicable requirements of Section 6 of these regulations and must also include the specific requirements delineated in Sections 9.2 through 9.10 of these regulations. Narratives, plans, or specifications required under Section 6 of these regulations which are clearly not applicable to the proposed breaching activities may be omitted from the submittal; however, the director reserves the right to specify those items which must be included in the breaching plan package.

9.2. Breach Dimensions - The breach opening in the dam shall be designed so that any water resulting from design storm inflows that is temporarily impounded behind the residual structure shall be less than the height and storage requirements of a "dam" set forth in Section 2.6 of these regulations. The breach shall be to original stream bottom level, except that a small impoundment of less than one (1) acre-foot storage may be retained for sediment control purposes.

9.3. Breach Channel - The embankment shall be breached with a designed channel having the capacity to carry the peak runoff from the design storm corresponding to the dam's hazard classification. The channel created by the breach shall have an erosion-preventive lining adequate to withstand the depth and velocity of the peak flows from a P100 rainfall event. The channel side slopes shall achieve a minimum stability factor of safety of 1.5.

9.4. Safety - Reservoirs shall be completely drained before breaching operations begin. Breaching work shall be scheduled during dry weather using National Weather Service advice and proceed quickly to reduce the potential for impounding water.

9.5. Blasting - If blasting is to be used in the breaching of a dam, a blasting plan shall be submitted to the director for approval. The plan shall include the distance to existing structures and the measures that will be taken to minimize air blast and flying materials. A pre-blast survey of existing nearby structures and water wells which may be affected by blasting may be required by the director.

9.6. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of Section 8.1.13 of these regulations shall be implemented during the breaching operation. The following measures shall also be implemented:

9.6.1. Reservoir areas, and the sediment deposits therein, shall be protected from erosion after the impounding capability has been eliminated by the breaching of the dam;

9.6.2. Silt deposits and barren areas in the reservoir shall be stabilized and revegetated;

9.6.3. Disturbed areas, including the faces on any remaining embankment, must be protected by vegetation or other means approved by the director;

9.6.4. A channel in the reservoir sediment may be required by the director in order to reestablish a stream channel; and

9.6.5. Permanent sediment basins, subject to ongoing maintenance, may be required by the director if the dam owner cannot demonstrate the effectiveness of other structural and vegetative measures in stabilizing the reservoir area and dam site.

9.7. Placement of Earthen Material - Material removed from the dam shall be placed in waste disposal areas delineated in the approved plan package. The material shall

be graded and compacted as necessary and stabilized from erosion by vegetation or other means approved by the director.

9.8. Placement of Non-Earthen Material - Concrete rubble and other rock material shall be placed in waste disposal areas delineated in the approved plan package. The material shall be placed in a manner to reduce hazardous conditions; protruding metal, wire, or bars are prohibited. The requirements of Section 8.1.14 of these regulations shall apply to the disposal of any other waste materials generated by the breaching operation.

9.9. Galleries and Drains - The effect of flows through the breach and backwater pressure on galleries and drains shall be evaluated. The galleries and drains shall be vented or sealed as necessary to prevent failure of the remaining structure.

9.10. Safety of Remaining Structure - The remaining structure shall have sufficient strength to support the maximum hydraulic loading without failure. The engineer shall attempt to reduce or eliminate hazards associated with an "attractive nuisance."

9.11. Construction Practices - The requirements of Section 8 of these regulations shall apply when breaching a dam unless clearly not applicable to the breaching operation; however, the director reserves the right to specify which requirements are applicable.

§ 47-34-10. Removal of a Dam.

10.1. Application to Remove a Dam - The owner of a dam must obtain a certificate of approval from the director prior to the removal of the dam. A complete application in accordance with the provisions of Section 5.1 of these regulations must be submitted to and approved by the director prior to the commencement of removal activities.

10.1.1. Plan Package Requirements - The plan package submitted in order to remove a dam shall be in accordance with the applicable requirements of Section 6 of these regulations and must also include the specific requirements delineated in Sections 10.2 through 10.8 of these regulations. Narratives, plans, or specifications required under Section 6 of these regulations which are clearly not applicable to the proposed removal activities may be omitted from the submittal; however, the director reserves the right to specify those items which must be included in the removal plan package.

10.2. Removal Requirements - Removal of a dam shall consist of the complete removal of the structure to the original ground except in special cases where it may be necessary or advantageous to leave small sections of the structure. Unless otherwise

approved by the director, the removal of a dam shall consist of complete removal of the structure to approximate original contour. A total of no more than ten percent (10%) of the length of the structure may remain at the abutment areas.

10.3. Safety - Reservoirs shall be completely drained before removal operations begin. Removal work shall be scheduled during dry weather using National Weather Service advice and proceed quickly to reduce the potential for impounding water.

10.4. Blasting - If blasting is to be used in the removal of a dam, a blasting plan shall be submitted to the director for approval. The plan shall include distance to existing structures and the measures that will be taken to minimize air blast and flying materials. A pre-blast survey of existing nearby structures and water wells which may be affected by blasting may be necessary.

10.5. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of Section 8.1.13 of these regulations shall be implemented during the removal operation. The following measures shall also be implemented:

10.5.1. Reservoir areas, and the sediment deposits therein, shall be protected from erosion after the impounding capability has been eliminated by the removal of the dam;

10.5.2. Silt deposits and barren areas in the reservoir shall be stabilized and revegetated;

10.5.3. Disturbed areas, including the faces on any remaining embankment, must be protected by vegetation or other means approved by the director;

10.5.4. A channel in the reservoir sediment may be required by the director in order to reestablish a stream channel; and

10.5.5. Permanent sediment basins, subject to ongoing maintenance, may be required by the director if the dam owner cannot demonstrate the effectiveness of other structural and vegetative measures in stabilizing the reservoir area and dam site.

10.6. Placement of Earthen Material - Material removed from the dam shall be placed in waste disposal areas delineated in the approved plan package. The material shall be graded and compacted as necessary and stabilized from erosion by vegetation or other means approved by the director.

10.7. Placement of Non-Earthen Material - Concrete rubble and other rock material

shall be placed in waste disposal areas delineated in the approved plan package. The material shall be placed in a manner to reduce hazardous conditions; protruding metal, wire, or bars are prohibited. The requirements of Section 8.1.14 of these regulations shall apply to the disposal of any other waste materials generated by the removal operation.

10.8. Safety of Remaining Structure - If any portion of the structure remains, that portion shall have sufficient strength to support the maximum hydraulic loading without failure. The engineer shall attempt to reduce or eliminate hazards associated with an "attractive nuisance."

10.9. Construction Practices - The requirements of Section 8 of these regulations shall apply when removing a dam unless clearly not applicable to the removal operation; however, the director reserves the right to specify which requirements are applicable.

§ 47-34-11. Abandonment of a Dam.

11.1. Application to Abandon a Dam - The owner of a dam must obtain a certificate of approval from the director prior to the abandonment of the dam. A complete application in accordance with the provisions of Section 5.1 of these regulations must be submitted to and approved by the director prior to the commencement of abandonment activities.

11.2. Reservoir Elimination - The reservoir area shall be completely filled to the crest elevation of the dam with approved material to eliminate the impoundment of water. The maximum impounding capacity upon completion of final grading shall not exceed one (1) acre-foot of impounding capacity. The final top elevation of the reservoir fill shall be higher than, and sloped into, the diversion system required under Section 11.4 of these regulations.

11.3. Embankment Stability - The remaining embankment shall be shown to achieve a minimum factor of safety in accordance with the provisions of Section 7.4.2.a.C of these regulations.

11.4. Diversion System - A diversion system designed for a P100 rainfall event shall be provided to capture the stream at the upstream end of the reservoir and convey stream water and embankment runoff water around the site. The diversion system shall outlet safely beyond the downstream toe of the embankment in a natural drainway capable of carrying the design storm without excessive erosion. The director may require the installation of an energy dissipator in accordance with the provisions of Section 7.4.2.d.B.(b)(F) of these regulations.

11.5. Sealing Conduits - All conduits through the embankment, with the exception of underdrain conduits, shall be sealed with concrete at the upstream end prior to elimination of the reservoir. The director may require pressure testing of conduits to determine seal adequacy.

11.6. Erosion and Sediment Control - Erosion and sediment control measures sufficient to comply with the provisions of Section 8.1.13 of these regulations shall be implemented during the abandonment operation.

11.7. Soil and Vegetative Cover - A sufficient layer of topsoil shall be provided to permit long-term growth of vegetation. A seeding and mulching mixture shall be proposed in the abandonment application to accomplish revegetation of the project area.

11.8. Retention of Jurisdiction - The director shall retain jurisdiction over the site for a minimum period of five (5) years after abandonment, during which time the dam and its appurtenances shall be inspected annually by an engineer experienced in such inspections. A report shall be filed with the director detailing the findings of each inspection and describing intended maintenance work. Should a major storm occur, a similar report shall be filed to detail the resultant condition of the structure.

11.9. Final Approval of Abandonment - At the completion of the five-year period, a final joint inspection by the engineer and the director shall be conducted to determine the effectiveness of the abandonment design and the potential need for continued maintenance. Should the director determine as a result of this inspection that an additional inspection time period or maintenance work is required, a letter detailing these requirements shall be sent to the owner. Should the director determine as a result of the inspection that the abandonment design has been effective, a letter of acceptance shall be issued stating that the dam has been properly abandoned.

§ 47-34-12. Reduction or Enlargement of a Dam.

12.1. Reduction of Dam Height To Less Than Jurisdiction.

12.1.1. A person planning to reduce the height of a dam so that the remaining structure will no longer meet the definition of "dam" set forth in Section 2.6 of these regulations must obtain a certificate of approval from the director.

12.1.2. A complete application in accordance with the provisions of Section 5.1 of these regulations must be submitted to and approved by the director prior to the commencement of reduction activities. The application must also contain information showing that the remaining impounding structure will not cause loss of life

or appreciable property damage downstream should that structure fail.

12.1.2.a. Plan Package Requirements - The plan package submitted in order to reduce the height of a dam shall be in accordance with the applicable requirements of Section 6 of these regulations and must also include the specific requirements delineated in Sections 12.1.3 and 12.1.4 of these regulations. Narratives, plans, or specifications required under Section 6 of these regulations which are clearly not applicable to the proposed reduction may be omitted from the submittal; however, the director reserves the right to specify those items which must be included in the reduction plan package.

12.1.3. The remaining structure shall have a properly designed spillway system capable of passing a Class A design storm without overtopping.

12.1.4. The remaining structure shall achieve a factor of safety in accordance with the provisions of Section 7.4.2.a.C or 7.4.2.b.B of these regulations as appropriate to the type of structure.

12.1.5. The requirements of Section 8 of these regulations shall apply when reducing the height of a dam unless clearly not applicable to the reduction operation; however, the director reserves the right to specify which requirements are applicable.

12.1.6. The director shall retain jurisdiction over the remaining structure until the reduction operation is completed and a letter of acceptance has been issued by the director.

12.2. Enlargement of a Structure to Jurisdiction.

12.2.1. A person planning to enlarge an existing structure so that the completed structure will meet the definition of "dam" set forth in Section 2.6 of these regulations must obtain a certificate of approval from the director.

12.2.2. A complete application in accordance with the provisions of Section 5.1 of these regulations must be submitted to and approved by the director prior to the commencement of enlargement activities.

12.2.2.a. Plan Package Requirements - The plan package submitted in order to enlarge a structure to jurisdiction shall be in accordance with the applicable requirements of Section 6 of these regulations. Narratives, plans, or specifications required under Section 6 of these regulations which are clearly not applicable to the proposed enlargement may be omitted from the submittal; however, the

director reserves the right to specify those items which must be included in the enlargement plan package.

12.2.3. The director will require adequate drilling and testing of the existing structure and foundation to ascertain inplace conditions.

12.2.4. The requirements of Section 8 of these regulations shall apply when enlarging a structure to jurisdiction unless clearly not applicable to the enlargement operation; however, the director reserves the right to specify which requirements are applicable.

§ 47-34-13. Dams Completed Before July 1, 1973.

13.1. Complete Application Required - An application for a certificate of approval shall be submitted to the director for all dams completed before July 1, 1973 which meet the definition of "dam" set forth in Section 2.6 of these regulations. If the engineer can demonstrate that the dam meets the design requirements specified in these regulations, an application for approval of an existing dam shall be submitted. If the dam requires modification to meet the requirements, an application for modification of an existing dam shall be submitted. If the above options are not exercised by the dam owner, an application to breach, remove, or properly abandon the dam pursuant to these regulations shall be submitted.

13.2. Performance Requirements - To receive a certificate of approval, all dams completed before July 1, 1973 shall meet the applicable design requirements of Section 7 of these regulations. Those dams which do not meet the design requirements of Section 7 of these regulations shall be modified, breached, removed, or properly abandoned pursuant to the provisions of these regulations.

13.3. Plan Package Requirements - The plan package submitted for approval or modification of an existing dam shall be in accordance with applicable requirements of Section 6 of these regulations, except that testing and analysis results may be substituted for design specifications. If as-built drawings are not available, the engineer may substitute drawings prepared by him which represent the existing conditions at the dam as determined through the testing and analysis program.

§ 47-34-14. Sale or Transfer of a Dam.

14.1. Notification and Documentation - Within thirty (30) days after the sale or transfer of a dam, the director must be notified of that transaction by the person who was issued the certificate of approval for the dam.

14.1.1. The seller of a dam must provide the following documentation to the director:

14.1.1.a. The name and address of new owner;

14.1.1.b. A copy of the signed agreement between the previous and new owner acknowledging certificate of approval responsibility and including any warranties, insurance coverage, or liability agreements between the parties;

14.1.1.c. The effective date of the ownership or responsibility transfer; and

14.1.1.d. Documentation that a copy of the certificate of approval or the most recent Dam Control Act notice to comply or order -- if a valid certificate of approval does not exist -- has been entered in the deed or land records of the county in which the dam is located.

14.1.2. The director may reissue a corrected certificate of approval reflecting the sale or transfer of a dam upon the receipt of appropriate documentation and fees.

§ 47-34-15. Dam Operations and Safety.

15.1. Safe Operations - The owner of a dam shall ensure that his dam is operated in a safe and responsible manner so as not to endanger life or property.

15.2. Operations Plan - Owners of dams which require the operation of gates, penstocks, or other means of regulating the reservoir level or downstream flow shall develop and submit an operations plan to the director for approval.

15.2.1. Plan Contents - The operations plan shall include, but not be limited to, normal and seasonal operational procedures for gates, penstocks, and other reservoir or downstream flow regulating devices. The name, address, and telephone number of each individual authorized to operate the dam shall also be included in the plan.

15.2.2. Plan Implementation - The operations plan shall be implemented immediately upon approval by the director and shall be updated periodically as necessary to reflect any changes in personnel or operation procedures.

15.3. Releasing Water - The owner of a dam may release water or lower the

reservoir elevation through the use of gates without prior approval of the director provided that the release of water will not adversely affect the dam structure, property, or water quality or pose a hazard to human life.

15.3.1. Emergency Releases of Water - Under emergency conditions, the owner of a dam may release water at a rate which may violate the criteria established under Section 15.3 of these regulations provided that such emergency release will not pose an unjustifiable hazard to human life. Notification must be given of a pending emergency release of water in accordance with the provisions of Section 15.8.1 of these regulations. In accordance with the provisions of W. Va. Code § 20-5D-13, this regulatory provision shall not relieve the owner of the dam of any liabilities resulting from an emergency release of water.

15.3.2. Low Flow Augmentation - The director may require the owner of a dam to maintain a specified stream flow below the dam or to augment the stream flow for appropriate in-stream uses.

15.4. Dam Safety Inspections - Periodic inspections of dams shall be performed to monitor and assess the condition of the dam. These scheduled safety inspections of completed dams shall be in the charge of an engineer.

15.4.1. Inspections by the Dam Owner - The owner of a dam or his agent shall perform safety inspections monthly or more frequently. Such inspections must survey the dam and its appurtenances to check for problems or changes since the last inspection. The owner or his agent shall inspect the dam more frequently than once per month during adverse weather conditions. The owner shall report any observed problems to the director.

15.4.2. Inspections by the Director - The director may inspect any dam at any time in accordance with the provisions of W. Va. Code § 20-5D-4(i).

15.4.3. Inspections by the Owner's Engineer - An engineering inspection shall be conducted annually for three (3) years after the completion of any dam, in accordance with the provisions of Section 8.3.4 of these regulations. Upon the conclusion of this three-year period, the dam shall be inspected by the owner's engineer at the frequency specified in Sections 15.4.3.a through 15.4.3.c of these regulations as appropriate to the hazard classification of the dam. The director may require additional inspections based upon site conditions. The director reserves the right to attend any inspection and require prior notification of the inspection from the owner of the dam.

15.4.3.a. Class A dams shall be inspected at least once every five

(5) years.

15.4.3.b. Class B dams shall be inspected at least once every three (3) years.

15.4.3.c. Class C dams shall be inspected at least once every two (2) years.

15.4.4. Inspection of Dams with Serious Problems - The director may establish the frequency of inspection of dams with serious problems for both inspections by the dam owner under Section 15.4.1 of these regulations and inspections by the owner's engineer under Section 15.4.3 of these regulations. The inspection of a dam with serious problems shall monitor slopes, seepage, bulges, scarps, vertical displacement, excessive erosion, piping, sudden changes in monitoring devices, and other visible factors which could indicate potential failure of the embankment, spillways, or other appurtenances. The director reserves the right to attend any inspection and require prior notification of the inspection by the owner of the dam.

15.5. Dam Safety Inspection Reports.

15.5.1. Inspection Reports for Completed Dams - A written report containing the observations of each inspection that is required under Sections 8.3.4 and 15.4.3 of these regulations shall be submitted to the director by the dam owner within thirty (30) days of the inspection. The report shall also describe maintenance work to be performed as a result of the inspection findings. Should a storm equal to or greater than a 50-year, 6-hour rainfall event occur, a similar report shall be filed to detail the resultant condition of the structure. Certification by an engineer shall be submitted to the director with each inspection report to verify that the dam and its appurtenances are functioning as designed.

15.5.2. Inspection Reports for Dams with Serious Problems - A written report containing the observations of each inspection required under Section 15.4.4 of these regulations shall be submitted to the director by the dam owner within thirty (30) days of the inspection.

15.6. Monitoring Plans - Owners of Class C dams shall formulate and submit a monitoring plan to the director for approval. Owners of Class A and Class B dams may be required by the director to formulate and submit a monitoring plan for approval.

15.6.1. The monitoring plan developed by the dam owner must follow the format of the example plan provided by the director and shall include, but not be

limited to, the following:

15.6.1.a. A description of the dam, including appropriate drawings and location maps;

15.6.1.b. A listing of problems and deficiencies and any implemented repairs;

15.6.1.c. The inspection frequency under varying weather conditions;

15.6.1.d. A description of areas or items to be inspected;

15.6.1.e. Corrective actions to be taken;

15.6.1.f. The responsible persons' names, addresses, and telephone numbers;

15.6.1.g. The method of notification of the director and county emergency services authorities; and

15.6.1.h. Other items required by the director based upon site-specific conditions.

15.6.2. Monitoring plans shall be updated annually. More frequent updating of the plans may be required by the director based upon rapidly changing personnel or site conditions. The monitoring plan shall be implemented immediately by the dam owner upon the approval of the plan by the director.

15.7. Emergency Action Plans - Owners of Class C dams shall formulate and submit an emergency action plan to the director for approval. Owners of Class A and Class B dams may be required by the director to formulate and submit an emergency action plan for approval.

15.7.1. The emergency action plan developed by the dam owner must follow the format of the example plan provided by the director.

15.7.2. The dam owner shall coordinate with county emergency service authorities in the development of the emergency action plan. The dam owner must provide copies of the inundation maps required under Section 3.5.3.b of these regulations to those authorities.

15.7.3. The dam owner shall provide county emergency services authorities with a copy of the monitoring plan, and all updates of that plan, approved by the director pursuant to Section 15.6 of these regulations.

15.8. Emergency Procedures.

15.8.1. Emergency Condition - If the owner of a dam determines that an emergency exists, he shall immediately notify any person who may be endangered if the dam should fail and then notify the appropriate county emergency services authorities and the director. After providing notification of the emergency condition, the owner shall immediately take any remedial action, such as an emergency release of water, that is necessary to protect life and property. The director may waive the requirement for a certificate of approval, as required under Section 4 of these regulations, where it is necessary to accomplish repairs under emergency conditions.

15.8.2. Dangerous Condition - Should a dangerous condition develop, the director shall be informed immediately. The owner of the dam shall immediately take any remedial action necessary to protect life and property. Emergency procedures developed in accordance with the provisions of Sections 15.6 and 15.7 of these regulations shall be implemented to protect life and property downstream. The site shall be inspected and monitored at least once every eight (8) hours until the emergency situation is alleviated. Continuous monitoring may be required by the director when there is an imminent danger to the health, safety, or welfare of the public.

15.8.3. Evaluation of Dangerous Conditions - If a dangerous condition develops, an engineering evaluation shall be initiated as soon as possible to formulate a plan for permanent correction of the dangerous condition. The evaluation and corrective action plan shall be submitted to and approved by the director prior to implementation.

15.9. Dam Owner Not Relieved of Responsibility - The director's approval of a monitoring plan, or updates to such a plan, pursuant to Section 15.6 of these regulations or his approval of an emergency action plan pursuant to Section 15.7 of these regulations shall not relieve the dam owner of his legal duties, obligations, or liabilities under W. Va. Code §§ 20-5D-10 and 20-5D-13.

§ 47-34-16. Dam Maintenance.

16.1. General Maintenance Requirements.

16.1.1. Required Maintenance - Each dam shall be maintained in accordance with the plans and specifications approved under the applicable certificate of

approval. The director may require maintenance to be performed on a dam, whether or not a certificate of approval has been issued for that dam.

16.1.2. Maintenance Plan - Owners of dams shall formulate and submit a written maintenance plan to the director for approval. The maintenance plan shall include, but not be limited to, schedules for maintaining embankments, concrete structures, vegetative or rock covers, gates, gate mechanisms, penstocks, or other reservoir-regulating devices, spillways, and appurtenances. The maintenance plan shall be implemented immediately by the dam owner upon the approval of the plan by the director. The maintenance plan shall be updated periodically as necessary to reflect changing site conditions.

16.2. Specific Maintenance Requirements.

16.2.1. All spillways and appurtenances shall be maintained to operate in accordance with the plans and specifications approved under the applicable certificate of approval.

16.2.2. All failures resulting from landslides or slope failures shall be corrected immediately if the failures significantly affect the safety or design capacity of the dam or its appurtenances. All failures shall be reported to the director.

16.2.3. All pipes shall be repaired or replaced when damaged, distorted, or if they otherwise fail to function properly in accordance with the plans and specifications approved under the applicable certificate of approval.

16.2.4. Leakage through joints, fissures, and cracks through or under the spillway channel shall be immediately investigated and repaired.

16.2.5. Any new gate which has been installed in a new dam or in the repair or modification of an existing dam, or any gate which has been opened within five (5) years prior to inspection by the director, shall be opened to at least thirty-three percent (33%) of its maximum capacity at least once annually. Gates not meeting the above requirements may remain closed until operated for the purposes of the owner or to alleviate an emergency condition and shall thereafter be opened at least once annually. All gate mechanisms shall be lubricated annually regardless of the operational status of the gate.

16.3. Routine Maintenance.

16.3.1. Routine maintenance of spillways shall be performed. Such

maintenance shall include the removal of sediment, brush, trees, obstructions, and rocks in stilling basins and the re-establishment of the structure to its original hydraulic design.

16.3.2. Routine inspections shall be made of all hydraulic structures in order to maintain proper operation. Special inspections shall be conducted whenever a significant flow through the structures has occurred.

16.3.3. If erosion on the embankment face or abutments occurs, the area shall be regraded and be provided with adequate drainage control or revegetation to prevent future occurrences.

16.3.4. All concrete structures and channel linings shall be maintained in accordance with the plans and specifications approved under the applicable certificate of approval. All cracks located in concrete channels shall be sealed immediately with a sealant approved by the director.

16.3.5. Access roads shall be maintained in order to provide access for emergency inspections, vehicles, and equipment.

16.3.6. The embankment or concrete structure of a dam shall be kept clear of trees and shrubs. The downstream toe and abutments of the dam shall be cleared to natural ground for a lateral distance of at least twenty-five (25) feet. All dams with vegetative covers shall be mowed at least once annually. Grazing by farm animals shall be controlled to prevent animal trails or other damage to the vegetative cover.

16.3.7. The embankment shall be kept clear of burrowing animals.

16.3.8. All monitoring devices shall be routinely inspected and repaired or replaced as necessary so that the devices function properly.

§ 47-34-17. Dam Repairs.

17.1. General Repair Requirements - The director may require repairs to be performed on a dam, whether or not the dam has a certificate of approval. Major repairs shall require a certificate of approval, issuance of which may or may not constitute final approval of the dam, as determined by the director.

17.1.1. Routine Repairs (No Certificate Required) - Repairs conducted in accordance with the provisions of Section 16.3 of these regulations shall not normally require an application for a certificate of approval; however, the director may require such an application based upon site-specific conditions.

17.1.2. Major Repairs (Certificate Required) - Any repairs to a dam other than routine repairs listed in Section 16.3 of these regulations shall require an application for a certificate of approval in accordance with the provisions of these regulations.

17.2. Specific Repair Requirements.

17.2.1. Removal of Trees and Tree Roots - All trees shall be removed from the embankment and abutment areas, unless otherwise approved by the director based upon site-specific conditions. Small trees with a base diameter of four (4) inches or less may be removed without removing the root system unless specific problems with the root system are evident. Larger trees may require special care in removal. The director may require the removal of root systems of large trees if the potential for seepage along the root system exists. If removal of root systems requires extensive excavation of the embankment, the removal shall be considered a major repair requiring a complete application for a certificate of approval.

§ 47-34-18. Application and Annual Registration Fees.

18.1. Application Fees - Each application submitted to place, construct, enlarge, alter, repair, remove or abandon a dam shall include an application fee. No fee, however, shall be assessed for dams designed and constructed by the soil conservation service for soil conservation districts. The following application fees shall apply:

18.1.1. The application fee for placement, construction, alteration, enlargement, repair, or approval of a dam constructed before July 1, 1973, shall be three hundred dollars.

18.1.2. The application fee for breaching, abandonment or elimination of a dam shall be two hundred dollars.

18.1.3. The application fee for removal of a dam shall be one hundred dollars.

18.2. Annual Registration Fees - Owners of existing dams holding certificates of approval shall be assessed an annual registration fee. Existing certificates of approval will be extended for one year in accordance with provisions of the Dam Control and Safety Act, West Virginia Code § 20-5D-7 upon receipt of the annual registration fee, an inspection report in accordance with Section 15.5 of these regulations, a monitoring and emergency action plan in accordance with Sections 15.6 and 15.7 of these regulations, and a maintenance plan in accordance with Section 16.1.2 of these regulations. No fee shall be assessed, however, for dams designed and constructed by the soil conservation service

for soil conservation districts. The following annual registration fees shall apply:

18.2.1. Class A dams shall be assessed fifty dollars.

18.2.2. Class B dams shall be assessed seventy-five dollars.

18.2.3. Class C dams shall be assessed one hundred dollars.

§ 47-34-19. Civil Administrative Penalties.

19.1. Enforcement Actions.

19.1.1. General - An authorized representative of the director may commence an enforcement action for any observed violation.

19.1.2. Enforcement Action Procedures - An enforcement action shall be in writing, shall be signed by the director or other authorized representative of the director, and shall set forth with reasonable specificity:

19.1.2.a. The nature of the enforcement action with a reference to the section of the statute, rule, regulation, order or certificate of approval term that was allegedly violated;

19.1.2.b. The time and date of the observance of the violation; and

19.1.2.c. A reasonable description of the dam where the violation was observed, where within the operation or maintenance of the dam the observation was observed, and the condition or hazard determined by the director.

19.2. Penalty Assessment Procedures.

19.2.1. Review of Enforcement Action and Penalty Calculation - The director shall review each enforcement action issued for civil administrative penalty assessment to determine:

19.2.1.a. The appropriateness of a civil administrative penalty;

19.2.1.b. The initial amount of penalty, if any, based upon the rates and methods given in these regulations;

19.2.1.c. The appropriateness of assessing a daily civil administrative penalty for continuing violations;

19.2.1.d. The total initial civil administrative penalty assessed; and

19.2.1.e. The appropriateness of assessing a separate civil administrative penalty against an individual person.

19.2.2. Notice of Civil Administrative Penalty - The director shall provide the violator with:

19.2.2.a. A notice of civil administrative penalty which shall include procedures for requesting an informal hearing and a notification of applicable time constraints; or

19.2.2.b. A notice of dismissal.

19.3. Hearings and Appeals.

19.3.1. Right to Informal Hearing - The violator shall have twenty (20) calendar days from his receipt of the notice of civil administrative penalty within which to request, in writing, an informal hearing before the assessment officer. If a hearing is requested, the assessment officer will hold the hearing to deduce the actual facts and circumstances regarding the violation and, based thereon, will make a final recommendation of civil administrative penalty assessment to the director. If no hearing is requested, the notice of civil administrative penalty shall become a final order after the expiration of the twenty-day period and the civil administrative penalty shall become due and payable.

19.3.2. Notice and Scheduling of Informal Hearing - If the violator requests an informal hearing within the twenty-day period, the assessment officer shall schedule such a hearing in accordance with the following procedures:

19.3.2.a. The time and place the informal hearing is to be held is to be communicated to any authorized representative of the director who filed an enforcement action bringing about the informal hearing, to the violator and to any person who has expressed an interest in writing concerning the enforcement action.

19.3.2.b. Such communication shall be provided at least fifteen (15) calendar days prior to the time of the hearing.

19.3.2.c. The assessment officer may continue the informal hearing only for good cause shown.

19.3.3. Informal Hearing Procedures - An informal hearing, as provided by these regulations, is intended to be an informal discussion of the facts which gave rise to the issuance of an enforcement action and shall be conducted in the following manner:

19.3.3.a. The West Virginia Rules of Civil Procedure and West Virginia Rules of Evidence shall not apply.

19.3.3.b. A record of the informal hearing is not required but may be made by any party to the hearing at the party's expense.

19.3.3.c. At formal review proceedings which may ensue, no evidence as to any statement made by one party at the informal hearing may be introduced as evidence by another party, nor may any statement be used to impeach a witness, unless the statement is or was available as competent evidence independent of its introduction during the informal hearing.

19.3.4. Written Decision - Within thirty (30) calendar days following the informal hearing, the director shall issue and furnish to the violator a written decision affirming, increasing, decreasing, or dismissing the initial civil administrative penalty assessment and giving the reasons therefor.

19.3.5. Request for Formal Hearing - Within thirty (30) calendar days after notification of the director's informal hearing decision, the violator may request a formal hearing of the assessment in accordance with the provisions of sections one, two and three, article five, chapter twenty-nine-a of the Code. If no formal hearing is requested, the director's decision shall become a final order after the expiration of the thirty day period and the civil administrative penalty shall become due and payable.

19.3.6. Request for Judicial Review - Within thirty (30) calendar days after notification of the director's formal hearing decision, the violator may request a judicial review of the assessment in accordance with the provisions of section four, article five, chapter twenty-nine-a of the Code. If no judicial review is requested, the director's decision shall become a final order after the expiration of the thirty day period and the civil administrative penalty shall become due and payable.

19.4. Separate Civil Administrative Penalties.

19.4.1. The director may assess a separate civil administrative penalty against any corporate director, officer, agent, or employee of a violator, or any other person, who authorizes, orders, or carries out a violation of the statute, rule, regulation, order, or certificate of approval term or who fails or refuses to follow an order from the director.

19.4.2. In determining the amount of a civil administrative penalty to be assessed against a person, consideration shall be given to the criteria specified in subsection 19.5 of these regulations.

19.4.3. The director shall serve on each person to be assessed an administrative penalty a notice of separate civil administrative penalty assessment. For purposes of this subsection of these regulations, service shall be deemed to be sufficient if it satisfies Rule 4 of the West Virginia Rules of Civil Procedure for service of a summons and complaint. A notice of separate civil administrative penalty assessment shall include:

19.4.3.a. A reference to the section of the statute, rule, regulation, order, or certificate of approval term allegedly violated;

19.4.3.b. A concise statement of the facts alleged to constitute the violation;

19.4.3.c. A statement of the amount of the separate civil administrative penalty to be imposed;

19.4.3.d. A copy of the underlying enforcement action; and

19.4.3.e. A statement of a person's right to an informal hearing.

19.4.4. A person shall have twenty (20) calendar days from receipt of the notice of separate civil administrative penalty assessment in which to request, in writing, an informal hearing before the assessment officer. If no hearing is requested, the notice of separate civil administrative penalty shall become a final order after expiration of the thirty-day period and the separate civil administrative penalty shall become due and payable.

19.4.5. The informal hearing, if requested, will be scheduled and conducted pursuant to subsection 19.3.2 et seq. of these regulations.

19.5. Civil Administrative Penalty Calculation Procedures.

19.5.1. The director shall calculate a civil administrative penalty by taking into account the seriousness of the alleged violation, good faith efforts on the part of the violator and any history of violations by the violator.

19.5.2. History of Violations (HOV) - The director shall take into account the violator's history of violations by determining if any enforcement actions concerning Certificate terms, requirements of the Act, regulations requirements, notices to comply or any orders have been taken against the violator during twenty-four (24) months prior to the violation. Those enforcement actions which were withdrawn, dismissed, or vacated shall not be included in the determination. Any outstanding violation within the time period shall constitute a history of violations.

19.5.3. Good Faith Effort - A good faith effort shall be considered as completion of nearly all requirements of the Certificate, Act, Regulations, notice to comply or order in question. Good faith may still be determined when minor aspects of the requirements which do not affect the safety of the dam have not been completed by the violator.

19.5.4. Maximum Assessed Penalty - Assessment of civil administrative penalties shall not exceed two hundred dollars per day per violation. The total assessed penalty for any violation shall not exceed a maximum of four hundred dollars.

19.5.5. Penalty Without Good Faith Effort by Violator - The civil administrative penalty shall be determined through the use of Table A of these regulations.

19.5.6. Penalty With Good Faith Efforts by Violator - The civil administrative penalty shall be determined through the use of Table B of these regulations.

TABLE A

Seriousness of Violation
(dollars/day/violation)

	No Hazard		Serious Problem		Dangerous Condition	
	No HOV	With HOV	No HOV	With HOV	No HOV	With HOV
Certificate	10	25	30	50	100	200
Dam Control Act	25	50	60	75	125	200
Regulations	50	75	85	100	150	200
Notice to Comply	75	100	125	150	175	200
Order	100	125	150	175	185	200

TABLE B

With Good Faith Efforts to Comply
(dollars/day/violation)

	No Hazard		Serious Problem		Dangerous Condition	
	No HOV	With HOV	No HOV	With HOV	No HOV	With HOV
Certificate	0	20	20	45	90	195
Dam Control Act	15	45	50	70	115	195
Regulations	40	70	75	95	140	195
Notice to Comply	65	95	115	145	170	195
Order	90	120	140	170	180	195

Note: HOV = History of Violations

INDEX

Circumstances Resulting in this Filing

47 C.S.R. 34
Dam Safety Regulation
Legislative Rule

This is an amendment to the Dam Safety Regulations, 47 C.S.R. 34 that brings the rule into conformance with legislation passed during the 1992 Legislative session. The amendment provides for a modest increase in certificate application fees, establishment of an annual registration fee, exempts soil conservation district dams designed and constructed by the U.S. Soil Conservation Service from all fees and adds civil administrative penalty provisions.

PREAMBLE TO A PROPOSED RULE
CONCERNING
DAM SAFETY REGULATIONS

AGENCY: Department of Commerce, Labor, and Environmental Resources; Division of Environmental Protection.

REGULATION: Title 47, Series 34, "Dam Safety Regulations."

ACTION: Filing of a Proposed Rule, and Notice of a Public Comment Period.

SUMMARY: The proposed amendment to the Dam Safety Regulations brings the rule into conformance with legislation passed during the 1992 Legislative session. The amendment provides for a modest increase in certificate application fees, establishment of an annual registration fee, exempts soil conservation district dams designed and constructed by the U.S. Soil Conservation Service from all fees and adds civil administrative penalty provisions.

Written comments with postmarks prior to August 8, 1993 will be accepted. Written comments should be sent to:

Brian Long
Division of Environmental Protection
Office of Water Resources
1201 Greenbrier Street
Charleston, West Virginia 25311

STATE OF WEST VIRGINIA
DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES
DIVISION OF NATURAL RESOURCES

State Capitol Complex
Building 3, Room 812
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0664
TDD 558-1439 TDD 1-800-354-6087
Telephone (304) 558-2771 Fax (304) 558-3147

GASTON CAPERTON
Governor

JOHN M. RANSON
Cabinet Secretary

J. EDWARD HAMRICK III
Director

DATE: 8-9-93

FACSIMILE TRANSMITTAL COVER

TO: Brian Long

FROM: Gordon Robertson
Division of Natural Resources
Wildlife Resources Section
FAX Number 304-558-3147
Phone Number 304-558-2771

COMMENTS: Orig. to follow in the mail

Number of pages including cover: 2

STATE OF WEST VIRGINIA
DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES
DIVISION OF NATURAL RESOURCES

State Capitol Complex
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GASTON CAPERTON
Governor

JOHN M. RANSON
Cabinet Secretary

J. EDWARD HAMRICK III
Director

August 6, 1993

Mr. Brian R. Long, Assistant Chief
Water Resources Section
Division of Environmental Protection
1201 Greenbrier Street
Charleston, West Virginia 25311-1088

Dear Brian:

Thank you for the opportunity to review the proposed dam safety regulations (Title 47, Series 34).

After reviewing the amendments I am concerned with the annual fee assessed agencies, such as our own, which maintain and operate several dams. As we continue to bring existing dams to current standards and build or accept new dams, the total annual fees will greatly escalate. Therefore, I am requesting that you consider a revision of the regulations under 47-34-18 that will create a fee for those persons that hold certificates of approval for more than five dams. I suggest that the annual fee for these persons be one-half the fee listed for each class of dam listed in 18.2.1-.3.

The authority to create the fee schedule gives this flexibility. In 20-5D-17 it states, "The schedule of annual registration fees shall be designed to establish reasonable categories of annual registration fees, including, but not limited to the size of the dam and its classification."

Again, I appreciate the opportunity to review the proposed regulations and I hope that you can accommodate our request for revision. If you wish to discuss this with me please do not hesitate to call.

Sincerely,

Robert L. Miles

Robert L. Miles
Chief
Wildlife Resources

RLM/ge
cc: Gordon Robertson
Dennis Kincer

ALMES & ASSOCIATES, INC.
CONSULTING ENGINEERS

Raleigh County Airport Industrial Park, 105 Philpott Lane
Beaver, WV 25813 Telephone: (304) 255-0491

FACSIMILE TRANSMITTAL FORM

BECKLEY FAX NO.: 304-255-4232

SHEET 1 OF 4 PROJECT REFERENCE NO. : Admin.

TRANSMITTAL TO: **FAX NUMBER:** (304) 558-5905

Mr. Brian R. Long

West Virginia Division of Environmental Protection

Office of Water Resources

REMARKS:

Please find enclosed our comments pertaining to the proposed Dam Safety Regulations. If there are any questions, please contact us.

SENT BY: Charles B. Gillian DATE: August 10, 1993

CC:

ALMES & ASSOCIATES, INC.
CONSULTING ENGINEERS

RALEIGH COUNTY AIRPORT INDUSTRIAL PARK, 105 PHILPOTT LANE BEAVER, WV 25813
TELE: 304/255-0491 FAX 304/255-4232

August 10, 1993

Project No. B92-117-235

Mr. Brian R. Long
Assistant Chief
WEST VIRGINIA DIVISION OF
ENVIRONMENTAL PROTECTION
Office of Water Resources
Dam Safety
1201 Greenbrier Street
Charleston, WV 25311-1088

Written Comments Pertaining to
Proposed Dam Safety Regulations and Fees
Department of Commerce, Labor &
Environmental Resources
Division of Environmental Protection
Charleston, WV 25311-1088

Dear Mr. Long:

We have reviewed the proposed Dam Safety regulations and feel that the Office of Water Resources should give consideration to the following items prior to finalizing the regulations.

From our past experience on solid waste and dam safety projects, we have encountered some overlap and inconsistency as relates to the definition of waste and water. In our opinion, the Dam Safety regulatory definition of waste is too broad and it would be appropriate to consider redefining, or at a minimum, differentiate between waste and water for the purpose of dam safety and solid waste disposal permitting. To alleviate unnecessary regulatory requirements, we recommend that the definition of waste in the Solid Waste regulations be adopted and referred to in the proposed Dam Safety Regulations. A copy of the solid waste definition is attached for consideration and review. In our opinion, a better definition of waste and reference to other regulations which were developed for waste disposal would effectively eliminate a current ambiguity between the Dam Safety and Solid Waste regulations. Also, it should be noted that the solid waste facilities are intended to retain waste, with limited rainfall storage capacity, but strict interpretation of the current Dam Safety regulations may require a Dam Safety permit, as well as a Solid Waste permit, which is certainly an unnecessary and unintentional regulatory burden.

Regarding the proposed fees, based on our experience with other regulatory agencies the proposed fees are very modest. It would appear that a minimum renewal fee should be consistent with the Public Lands maintenance fee of $100 charged for stream crossings or a graduated fee for the higher hazard class structures such as: $100 for Class A, $150 for Class B, and $200 for Class C. From our experience in working with the dam control staff, the office could utilize

additional funding, especially when one considers the liability issue, compared to other regulatory application fees which range from $500 to $5,000, with minimal liability exposure. The rationale behind a higher renewal fee is reasonableness in view of other regulatory fees, better service to the applicants, and more expeditious review and application processing time.

We trust that these comments are worthy of your consideration. If there are any questions, please feel free to contact us.

Respectfully submitted,

ALMES & ASSOCIATES, INC.
CONSULTING ENGINEERS

Charles B. Gillian

Charles B. Gillian
Project Manager

CBG:jdr

Enclosure

conditions.

2.51. "Sewage" means water-carried human or animal wastes from residences, buildings, industrial establishments, or other places together with such groundwater infiltration and surface waters as may be present.

2.52. "Sludge" means any solid, semi-solid, residue, or precipitate separated from or created by a municipal, commercial, or industrial waste treatment plant, water supply treatment plant, or air pollution control facility, or any other such waste having similar origin

2.53. "Solid Waste" means any garbage; paper; litter; refuse; cans; bottles; sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; other discarded materials, including carcasses of any dead animal or any other offensive or unsightly matter; solid, liquid, semisolid, contained liquid or gaseous material resulting from industrial, commercial, mining, or community activities. The term "solid waste" does not include:

2.53.1. Solid or dissolved material in sewage;

2.53.2. Solid or dissolved materials in irrigation return flows;

2.53.3. Industrial discharges which are point sources and have permits under W. Va. Code §20-5A;

2.53.4. Source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended;

2.53.5. A hazardous waste either identified or listed under W. Va. Code §20-5E;

2.53.6. Refuse, slurry, overburden, or other wastes or material -- resulting either from coal-fired electric power generation or from the exploration, development, production, storage, or recovery of coal, oil and gas, or other mineral resources -- that is placed or disposed of at a facility which is regulated under W. Va. Code §§22, 22A, or 22BA so long as such placement or disposal is in conformance with a permit issued pursuant to such chapters; and

2.53.7. Materials which are recycled by being used or reused in an industrial process to make a product, as effective substitutes for commercial products, or are returned to the original process as a substitutes for raw material feedstock.

2.54. "Solid Waste Disposal" means the practice of disposing solid waste including placing, depositing, dumping, or throwing or causing to be placed, deposited, dumped, or thrown any solid

Underground Injection Control Fee, 47 CSR 9 - 16 copies of all letters received in response to public comment period.

Class 5 Injection Well Type Descriptions, 47 CSR 9A - 16 copies of all letters received in response to public comment period.

Dam Safety Regulations, 47 CSR 34 - 16 copies of all letters received in response to public comment period.

Groundwater Protection Act Fee Schedule, 47 CSR 55 - 16 copies of all letters received in response to public comment period.

Assessment of Civil Administrative Penalties 47 CSR 56 - 16 copies of transcript from public hearing and all letters received in response to public comment period.

Groundwater Quality Standard Variances, 47 CSR 57 - 16 copies of transcript from public hearing and all letters received in response to public comment period.

Groundwater Protection Regulations, 47 CSR 58 - 16 copies of transcript from public hearing and all letters received in response to public comment period.

Monitoring Well Regulations, 47 CSR 59 - 16 copies of transcript from public hearing and all letters received in response to public comment period.

WEST VIRGINIA
MANUFACTURERS ASSOCIATION

SUITE 503
405 CAPITOL STREET
CHARLESTON, WV 25301
TELEPHONE (304) 342-2123

August 5, 1993

Mr. Brian Long
Division of Environmental Protection
Office of Water Resources
1201 Greenbrier Street
Charleston, WV 25311

Re: Proposed Dam Safety Regulations

Dear Mr. Long:

Enclosed, for your review, please find the comments of the West Virginia Manufacturer s Association regarding the above-referenced proposed regulations. The Manufacturers Association appreciates being afforded the opportunity to comment on the proposed regulations.

Very truly yours,

Robert L. Foster, Chairman
Environmental, Safety and Health Committee

Enclosure

cc: Ms. Karen S. Price, President

COMMENTS OF THE WEST VIRGINIA MANUFACTURERS ASSOCIATION REGARDING THE PROPOSED AMENDMENTS TO DAM SAFETY RULES 47 C.S.R. 34

Prepared By:

Environmental, Safety & Health Committee
West Virginia Manufacturers Association
405 Capitol Street, Suite 503
Charleston, West Virginia 25301

and

Robinson & McElwee
600 United Center
Post Office Box 1791
Charleston, West Virginia 25326

Counsel for
West Virginia Manufacturers Association

August 5, 1993

COMMENTS OF THE WEST VIRGINIA MANUFACTURERS ASSOCIATION REGARDING THE PROPOSED AMENDMENTS TO DAM SAFETY RULES 47 C.S.R. 34

I. Introductory Remarks.

During the 1992 Legislative session, the West Virginia Legislature enacted an amended version of the West Virginia Dam Control and Safety Act ("Act"), W. Va. Code §§ 20-5D-1 et seq. Although similar in many respects to the former Dam Control Act, W. Va. Code §§ 20-5D-1 to 20-5D-14, the new enactment wrought significant changes to the previous statute. Chief among these were that the 1992 amendments (i) expanded the scope of the existing Act by clarifying that dams which were designed and constructed by the U.S. Soil Conservation Service, but which were not owned or operated by the Conservation Service, would be regulated, (ii) authorized the Director of the Division of Environmental Protection ("Director") to issue enforcement orders and provided for hearings regarding such orders, (iii) authorized the Director to levy civil penalties for violation of the Act, certificates of approval, or regulations, (iv) authorized the Director to seek injunctive relief for such violations, (v) required the Director to establish a schedule of application fees, and raised the cap on application fees, (vi) authorized the Director to assess annual registration fees, and required the Director to establish a schedule for registration fees. On July 7, 1993 the West Virginia Division of Environmental Protection ("DEP") filed a series of Proposed Dam Safety Regulations ("Proposed

Regulations") with the Secretary of State. The Proposed Regulations appear to be directed principally at effecting the foregoing statutory changes.

The West Virginia Manufacturers Association ("WVMA") represents a broad cross-section of industrial concerns that operate in West Virginia. Members of the WVMA owning and operating impoundments will be affected by the changes in the Act and the Proposed Regulations. To serve the interests of its members and the broader public interest, the WVMA offers the following comments.

II. Comments Regarding Application Fees.

The Act clearly authorizes the Director to promulgate rules requiring payment of application fees and annual fees. W. Va. Code § 20-5D-4(f). Under § 47-34-18.1 of the Proposed Regulations, owners of dams constructed before July 1, 1973[1] would be required to pay an application fee of $300 for engaging in the following activities: (1) placement; (2) construction; (3) alteration; (4) enlargement; (5) repair; or (6) approval. None of the 5 terms that are listed as triggering payment of the application fee are defined in the Proposed Regulations. The terms "alterations or repairs," and "enlargement" are defined in W. Va. Code § 20-5D-3. However, "placement," "construction," and "approval" remain undefined in either the Act or the Proposed Regulations. Absent clear definition of these terms, there exists a

[1] It appears, and we understand, that dams which were constructed after July 1, 1973, and which have already obtained certificates of approval as required under previous enactments will not be required to reapply, unless there is a material change to the existing dam and such change exceeds the scope of a routine repair. See W. Va. Code §§ 20-5D-11 and 20-5D-5.

potential that disagreements could arise regarding what types of activity necessitate payment of application fees.

While the Proposed Regulations attempt to set out the circumstances in which application fees will apply, the Proposed Regulations do not clearly state that the application fees apply to new dams. The application fee requirement found in proposed § 47-34-18.1 refers only to dams that were "constructed before July 1, 1973." If the application fee is to apply to construction of new dams, this needs to be clarified.

Pursuant to § 47-34-18.2 of the Proposed Regulations, an application fee of $200 would also be required for: (1) breaching a dam; (2) abandonment of a dam; or (3) elimination of a dam. Of these trigger terms, only "abandonment" is defined in the Proposed Regulations. Neither the Act nor the Proposed Regulation provide concrete guidance regarding the meaning or interpretation of the remaining trigger terms.

An application fee is also imposed by § 47-34-18.1.3 of the Proposed Regulation for "removal" of a dam. Again, neither the Act nor the Proposed Regulation provide any concrete definition or specific guidance regarding this trigger term.

III. Comments Regarding Annual Registration Fees.

The Act clearly authorizes the Director to require persons holding a certificate of approval to pay an annual registration fee of up to $100. W. Va. Code § 20-5D-4(f). However, in addition to requiring payment of an annual fee, § 47-34-18.2 of the Proposed Regulations would require dam owners to file (i) an inspection report, (ii) a monitoring and emergency action plan, and (iii) a maintenance plan with the annual fee in order to get existing certificates of

approval extended for one year. Proposed § 47-34-18.2 cites W. Va. Code § 20-5D-7 as authority for requiring that all of the foregoing be filed with the annual fee. However, W. Va. Code § 20-5D-7 merely states that: "Unless otherwise extended by the director, a certificate of approval is valid for a period of not more than one year."

Although the existing regulations require dam owners to submit inspection reports, a monitoring and emergency action plan, and a maintenance plan, there is nothing in the Act which requires these items to be re-submitted annually as a condition precedent to extension of a certificate of approval. To do so, absent a material change in operations that would indicate that re-submitting these items would be appropriate, appears unnecessary and duplicative, and would serve to increase administrative expenses incurred by both dam owners and the DEP. Some modification to these provisions are in order to simply require that these items be on file with DEP keyed with appropriate review and resubmittal standards if and when necessary as reasonably related to dam safety, not the payment of an annual fee.

Proposed § 47-34-18.2 also provides that "existing certificates of approval will be extended for one year. . .upon receipt of the annual registration fee" and the other items discussed above. By so mandating, the proposed rule does not explicitly recognize that, under W. Va. Code § 20-5D-17, an existing certificate of approval remains valid for 180 days past the date that payment of the annual fee becomes due. As it currently reads, proposed § 47-34-18.2 could be construed as authority for finding that a certificate of approval becomes void, if payment is not received every 12 months. Such a construction would not comport with the statute, and the proposed rule should be revised so as to recognize the 180-day grace period. Proper revision of the proposed rule would eliminate the possibility of enforcement actions being

wrongfully initiated against a certificate holder merely because payment has not been tendered by the original due date.

IV. Comments Regarding Enforcement Actions.

The term "enforcement action" is defined by proposed § 47-34-2.17 to mean:

> [a] written notification provided to an alleged violator by the director within 15 calendar days of an inspection, or in accordance with the provisions of the Act.

While this definition appears clear enough, proposed § 47-34-19.1, the section that specifically addresses enforcement actions, makes no reference to the 15-day time limitation for providing dam owners with notification of an alleged violation. The Proposed Regulation could be simplified and clarified if a reference to the 15-day requirement for serving notice were incorporated into proposed § 47-34-19.1.

Also, proposed § 47-34-19.1.2.c, a subsection detailing the contents of a notice of violation, calls upon the director, or his/her agents, to provide a "reasonable description of the dam where the alleged violation was observed." This requirement is ambiguous, and fails to mandate that, where possible, the relevant certificate of approval be cited or otherwise specified in the notice. If such a citation is omitted from the notice of violation, a company that operates more than one dam or holds more than one certificate of approval could have difficulty determining which dam was at issue.

Similarly, proposed § 47-34-19.1 makes no provision for notifying the alleged violator regarding what, if any, action is to be taken to remedy the alleged violation. If inspectors were authorized to include comments in their notice to the alleged violator specifying

what remedial action must be taken and by when these remedial activities must be accomplished, the enforcement action would be rendered a much more efficient vehicle for achieving the Act's goals.

V. Comments Regarding Penalty Assessment Procedures.

Proposed § 47-34-19.2.2.a requires the director to provide a "violator" (should be corrected to read "alleged violator") with a "notice of civil administrative penalty." Under the Proposed Regulations, such notice must include "procedures for requesting an informal hearing and a notification of time constraints." However, the Proposed Regulations do not require that any other information be included in the notice. This may violate the alleged violator's right to due process. To remedy due process concerns the notice should also, at a minimum, include: (1) a reference to the certificate of approval in relation to which the penalty is being assessed; (2) a citation to the specific statute and/or regulation pursuant to which the penalty is being assessed; and (3) the factual grounds upon which the director is assessing the civil administrative penalty, including references to specific violations.

The penalty assessment procedures could also be simplified and clarified by either (i) incorporating a reference to the applicable calculation procedures found in proposed § 47-34-19.5 into proposed § 47-34-19.2, or (ii) repositioning the calculation procedures within the text of the Proposed Regulations so that they appear directly after the assessment procedures. This same comment holds for the location and placement of proposed § 47-34-19.4, "Separate Civil Administrative Penalties."

VI. Comments Regarding Hearings and Appeals.

Proposed § 47-34-19.3, the section of the Proposed Regulations that addresses the hearing and appeal process, does not require an assessment officer that has received notice from an alleged violator requesting an informal hearing to schedule that hearing within a fixed amount of time. This omission lends an air of ambiguity and uncertainty to the appeal process, and does not provide the alleged violator with a predictable or reliable timetable, according to which information and counsel necessary for the initial hearing can be obtained.

This lack of certainty is partially remedied by proposed § 47-34-19.3.2.b, which requires that an alleged violator be provided with notice 15 days prior to the informal hearing. However, such notice does not forestall the possibility that the informal conference will fail to be held in a timely manner so as to facilitate review of the civil penalty.

VII. Comments Regarding Separate Civil Administrative Penalties.

Proposed § 47-34-19.4.1 would authorize the director to assess a separate civil administrative penalty against any corporate director or officer:

> [w]ho authorizes, orders, or carries out a violation of the statute, rule, regulation, order, or certificate of approval term or who fails or refuses to follow an order from the director.

The only provision in the Act which expressly authorizes penalties to be assessed against corporate directors or officers is W. Va. Code § 20-5D-13, which allows for fines and misdemeanor conviction of directors and officers that "knowingly" perform work or permit work to be performed on a dam without a certificate of approval or in violation of or contrary to any approval provided for in Article 5D.

By extending the scope of director and officer liability beyond the criminal penalties specified in the Act, proposed § 47-34-19.4.1 appears to exceed the director's legitimate rulemaking powers. West Virginia law has long recognized the value and importance of the corporate form as an integral mechanism for conducting business, and the customary protections afforded corporate directors and officers ought not to be lightly disregarded. By specifically including directors and officers in the Act's criminal penalty provision, the legislature appears to have evidenced an intent to distinguish between "persons" generally subject to the Act and corporate officers and directors. Arguably, by making this distinction in the Act, the legislature has also demonstrated its will to disregard the corporate form only in limited circumstances.

West Virginia
A Welcome Change

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Gaston Caperton
Governor

Department of
Commerce, Labor
& Environmental
Resources

John Ranson
Cabinet Secretary

Division of
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304/558-2764
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July 23, 1993

MEMORANDUM

TO: Brian Long, Asst. Chief
Dam Safety, Water Resources, DEP

FROM: Cordie Hudkins, Director
Parks & Recreation, T & P

RE: Proposed Dam Safety Regulations (Title 47, Series 34)

Thank you for transmitting a copy of the above referenced regulations. In response, the following comments are offered.

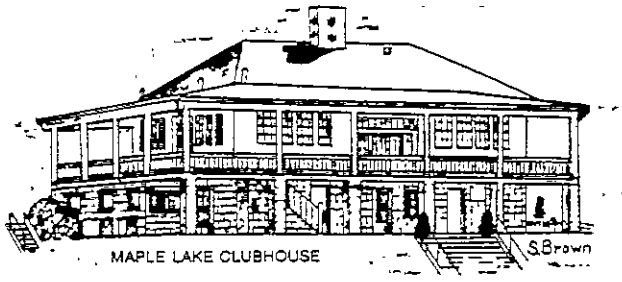
- New regulations require certain fees to be paid related to state-owned dams. Soil Conservation Service; however, is exempted from such fees. It therefore seems reasonable for all state-owned dams including those owned by DNR including those located on state parks and forests to be exempt for payment of fees.

- While I do not think it has ever been made clear who owns these dams, we do know that DNR owns the land and that we are responsible for the management. It appears that one or both of us could face civil penalties if corrections are not made in an established time frame. In this case, the responsible party should be determined before either we or DNR furnish final comments.

Your thoughts on this matter would be appreciated.

COH/aj

cc: Ron Fortney
Steve DeBarr



Maple Lake Club, Inc.
P. O. BOX 728
BRIDGEPORT, WEST VIRGINIA 26330

Administator of Public Comments
Department of Natural Resources
1201 Greenbriar Street
Charleston, Wv 25311-1088

Dear Administrator: August 5, 1993

Maple Lake Club, Inc. would like to comment on the proposed amendment to the Dam Safety Regulations (47-34), specifically the proposal to increase certificate application fees and the establishment of an annual registration fee.

As an owner of a dam on a recreational lake, we see no benefit for us as a result of the fees. Rather, we see the money being used to further enforce an onerous Dam Act, clearly out of touch with historical weather data.

It is also important to look at the larger picture. Maple Lake has been required to put in a Water Treatment Plant, we are currently being required to correct a slight leak in the emergency drain pipe in the dam, and to be in compliance with the Dam Act within 5 year. This fee is yet another burden on our residents by the State and we hope to see this amendment defeated.

As a final note, the Dam Act needs to be revised to take into account the historical performance of dams that have withstood severe storms. It makes little sense to spend hundreds of thousands of dollars to provide for a storm that has never occurred, and may not.

Sincerely,

Gary A. Abbate
Chairman, Dam Committee

LeBoeuf, Lamb, Leiby & MacRae

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

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August 10, 1993

VIA FEDERAL EXPRESS

Mr. Brian Long
Assistant Chief
Office of Water Resources
Division of Environmental Protection
1201 Greenbrier Street
Charleston, West Virginia 24311-1088

Re: Comments to Proposed Regulations

Dear Mr. Long:

Enclosed for filing on behalf of Elkem Metals Company is a copy of its Comments to the Proposed Dam Safety Regulations, W. Va. C.S.R. 47-34-1, et seq. Please time-stamp the other copy of the Comments and return it in the self-addressed, postage-prepaid envelope provided.

Thank you for your consideration.

Yours very truly,

Bonnie Robinson
Attorney for Elkem Metals Company

cc: H. Shaffer
J.L. Simpson

STATE OF WEST VIRGINIA

Proposed Regulations Title 47 Legislative Rules Series 34 - Dam Safety Regulations	:	**Division of Environmental Protection - Department of Commerce, Labor and Environmental Resources**

COMMENTS OF ELKEM METALS COMPANY

Elkem Metals Company ("Elkem"), owner and operator of the Hawks Nest-Glen Ferris Hydroelectric Project ("the Project"), hereby submits comments to the West Virginia Division of Environmental Protection, Department of Commerce, Labor and Environmental Resources ("the Division" or "DEP") in response to an invitation for public comment on proposed revisions to Title 47 Legislative Rules, Series 34 - Dam Safety Regulations. The proposed regulations include new annual registration and civil penalty/enforcement provisions. W. Va. C.S.R. §§ 47-34-18 & -19 (proposed). Although Elkem takes no position on the substance of the proposals, it recommends that the Department further revise its regulations to minimize any confusion in the future and make clear that the regulations do not apply to federally-licensed hydroelectric projects such as the Hawks Nest Project that are under the jurisdiction of and licensed by the Federal Energy Regulatory Commission ("FERC"). This conclusion is required by the Federal Power Act ("FPA"), 16 U.S.C.A. §§ 791-823a (West 1985 & Supp. 1993) and implied in the Division's regulations themselves. In addition, the proposal does not purport to expand the scope of the regulations, which, to Elkem's knowledge, have never been applied to a federally-licensed project in the State.

1. The FPA Prohibits the Division From Regulating the Operation and Maintenance of the Hawks Nest and Glen Ferris Dams.

The FPA is a comprehensive statute that governs virtually every aspect of the construction, operation and maintenance of jurisdictional hydroelectric projects. A project is jurisdictional if it is located on a navigable waterway, 16 U.S.C.A. § 797(e) (West Supp. 1993), or, if constructed after 1935, it affects interstate commerce, 16 U.S.C.A. § 817(a) (West Supp. 1993). Jurisdictional projects must receive a license from the FERC in order to be constructed and to operate. 16 U.S.C.A. § 797(e) (West Supp. 1993). The Hawks Nest Project, located on the New and Kanawha Rivers, is a jurisdictional project. 32 FPC 770 (1964). Accordingly, Elkem received a New License for the Project on December 11, 1987, which will expire on January 1, 2017. 41 FERC ¶ 62,289 (1987).

The Supreme Court has held that states are preempted from regulating jurisdictional projects in a manner that could conflict with the FPA's comprehensive scheme of federal regulation. In First Iowa Hydro-Electric Cooperative v. FPC, 328 U.S. 152 (1946), the Court held that the purpose of the FPA was to promote the development of water power resources and that this detailed national regulation scheme should not be obstructed by conflicting state laws. Id., at 180-81. The Court also noted that requiring applicants to obtain a state permit prior to securing a federal license would vest in the states a veto power over federal projects. Such veto power, it concluded, could destroy the effectiveness of the FPA and subordinate to state control the

"comprehensive" planning which the FPA entrusts to the federal government. Id., at 182.

States are also prohibited from requiring jurisdictional projects to obtain state permits even if the permits are not a precondition to a federal license. In Town of Springfield, Vermont v. Environmental Board, 521 F. Supp. 243, 249 (D. Vermont 1981), the court stated: "The result is the same whether the state permit is required as a condition precedent to obtaining a federal license or as an independent exercise of the state regulatory power. In either event, the power to withhold a state permit is the power to thwart a federal project."

Many of the sections of the Dam Control and Safety Act apply to the same areas regulated by the FPA and, therefore, are preempted with respect to jurisdictional projects like the Hawks Nest Project. For example, the Dam Control and Safety Act provides that it is "unlawful for any person to place, construct, enlarge, alter, repair, remove or abandon any dam" without obtaining a certificate of approval. W. Va. Code § 20-5D-5 (1993). It also contains procedures for the Division to inspect dams and to provide emergency procedures in the event of a dam failure. W. Va. § 20-5D-10 (1993). The FPA, however, vests exclusive authority in the FERC with respect to "constructing, operating, and maintaining dams," 16 U.S.C.A. § 797(e) (West Supp. 1993), and with respect to the revocation, alteration or surrender of licenses, 16 U.S.C.A. §§ 799 & 803(b) (West 1985). Furthermore, safety inspections and emergency procedures for jurisdictional projects are the exclusive responsibility of the FERC. 18 C.F.R. Part 12 (1992).

Insofar as the State is prohibited from regulating the operation and maintenance of the Hawks Nest and Glen Ferris dams, Elkem recommends that the Division revise the proposed Dam Safety Regulations to clarify this fact.

2. The Hawks Nest and Glen Ferris Dams Are Not Subject To Regulation Under The Dam Control and Safety Act Or The Dam Safety Regulations.

Even if the comprehensive nature of the FPA did not prohibit regulation of the Hawks Nest and Glen Ferris dams by the State of West Virginia, the dams would nevertheless be excluded from regulation by virtue of the language of the Dam Control and Safety Act and the Division's regulations. Both the Act and regulations apply to the construction and operation of "dams," which is defined to exclude "[a]ny dam for which the operation and maintenance thereof is the responsibility of the federal government." W. Va. Code § 20-5D-3(g)(A) & (B) (1993); W. Va. C.S.R. §§ 47-34-2.8.1 & -2.8.2 (proposed). To the extent that virtually every aspect of the Project's operation and maintenance is regulated by FERC through the license, the Hawks Nest and Glen Ferris dams do not quality as "dams" within the definition of the Act.

The license controls all aspects of the dams' operations: allowable minimum flows (Articles 401, 402 and 410), reservoir fluctuation (Article 404) and changes in river flow (Article 405). Pursuant to the FPA, Elkem may not modify the Project's operations, 16 U.S.C.A. § 803(b) (West 1985), alter or abandon the Project, 16 U.S.C.A. § 799 (West 1985), or transfer any of the facilities under the license, 16 U.S.C.A. § 801 (West 1985), without approval from

the FERC. In addition, Elkem must comply with stringent dam safety regulations promulgated by the FERC, 18 C.F.R. Part 12 (1993). The effect of these regulations is to vest ultimate responsibility for the dam's "operation and maintenance" with the FERC, not Elkem.

FERC satisfies its regulatory requirements for hydroelectric projects under the FPA through its control of project licensees. It has held that a licensee "must have sufficient control over project works and lands to enable the Commission, through the licensee, to carry out its regulatory responsibilities with respect to the project.... The Commission does not look to non-licensees for fulfillment of its license requirements." Marsh Valley Hydroelectric Company, 64 FERC ¶ 61,120 (1993). See also New York State Electric & Gas Corp., 16 FERC ¶ 61,176 (1981).

The proposed regulations create new provisions for annual registration fees and civil penalties for violations of the regulations. Both new provisions apply to "dams" as defined by proposed W. Va. C.S.R. § 47-34-2.8.2. Insofar as the Hawks Nest and Glen Ferris dams are outside of the definition of "dams," they would not be subject to the new proposed provisions in the same way that they are not now subject to the existing provisions.

CONCLUSION

For the above-discussed reasons, Elkem recommends that the Division further revise its regulations to clarify that the Dam

Control and Safety Act does not apply to federally-licensed hydroelectric dams, such as the Hawks Nest and Glen Ferris dams.

Respectfully submitted,

Bonnie Robinson
LeBOEUF, LAMB, LEIBY & MacRAE
125 West 55th Street
New York, New York 10019-4513
(212) 424-8000

Attorney for Elkem Metals Company

Dated: August 10, 1993